

ANNUAL REPORT OF THE
COMMISSIONERS OF THE
DISTRICT OF COLUMBIA
YEAR ENDED JUNE 30, 1909

Vol. II
ENGINEER DEPARTMENT
REPORTS

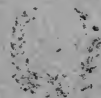


WASHINGTON
GOVERNMENT PRINTING OFFICE
1909

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WASHINGTON, D. C.

Vol. II

MINERAL DEPARTMENT
ST. LOUIS



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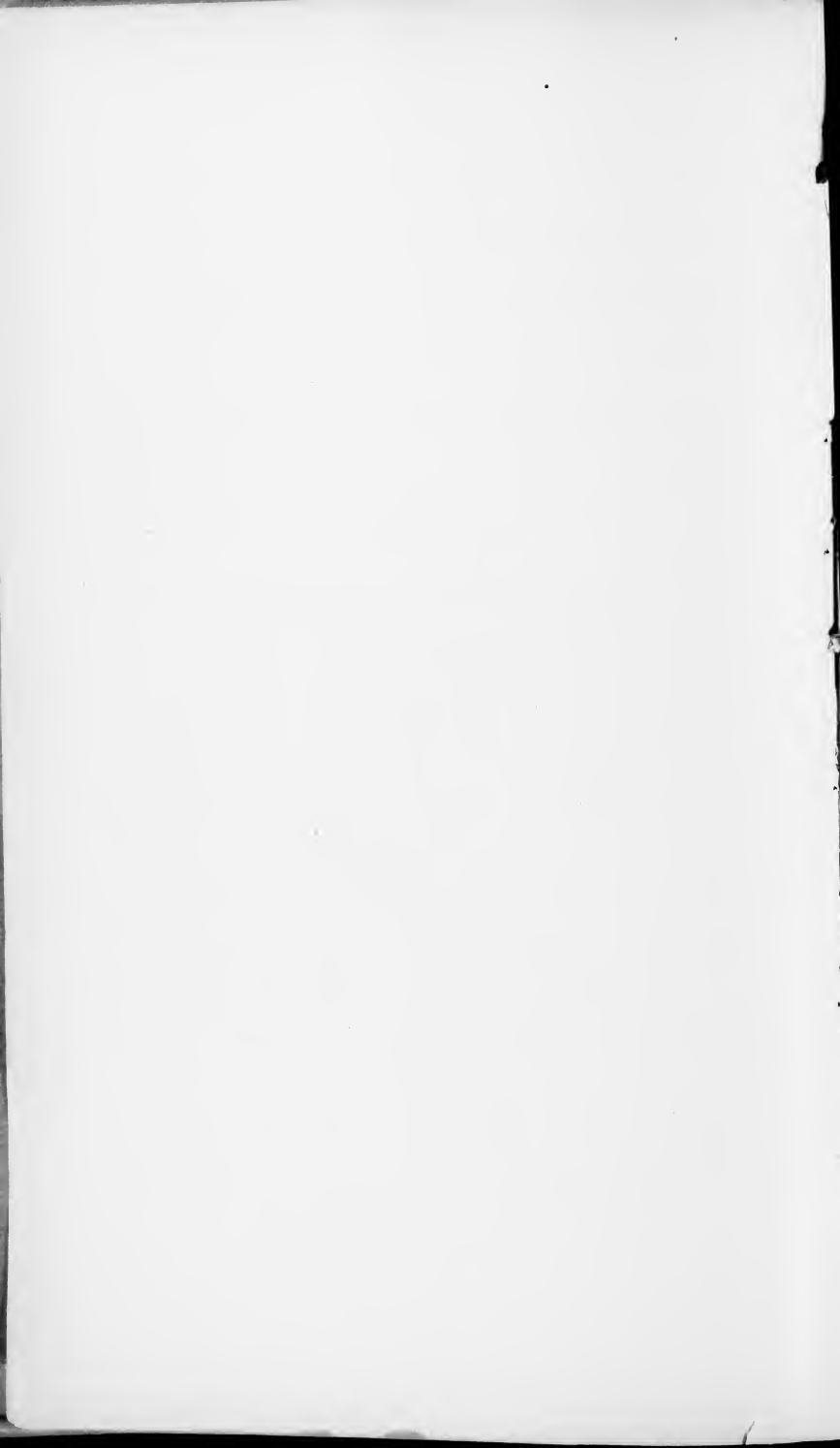
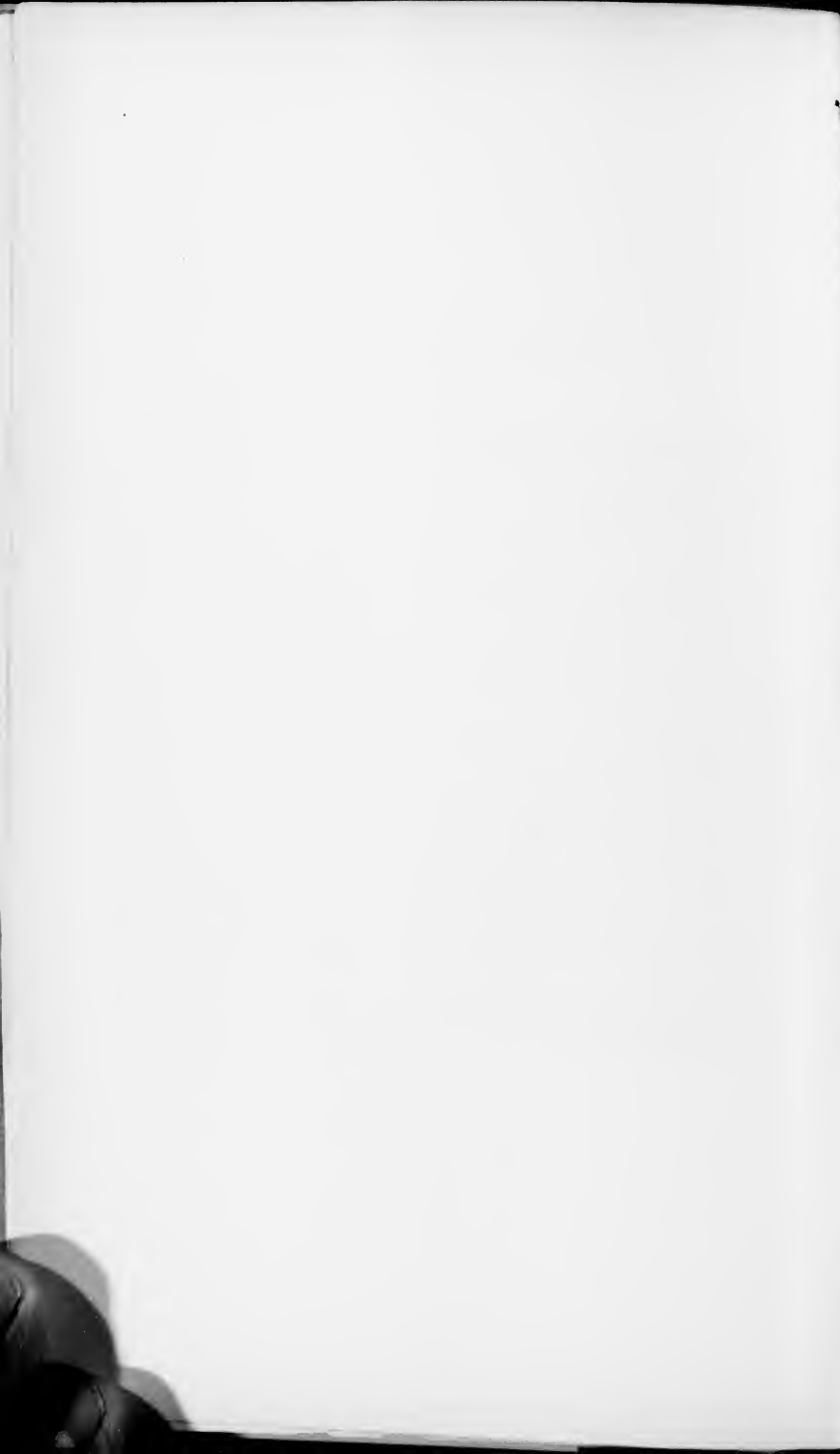


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EXTRACT FROM THE REPORT OF THE COMMISSIONERS OF THE DISTRICT OF COLUMBIA FOR THE YEAR ENDED JUNE 30, 1909.

OFFICE OF THE COMMISSIONERS
OF THE DISTRICT OF COLUMBIA,
Washington, December 6, 1909.

The Commissioners of the District of Columbia herewith submit, for the information of Congress, as required by law, their annual report of the official doings of the government of said District for the fiscal year which ended June 30, 1909.

* * * * *

ELIMINATION OF GRADE CROSSINGS.

The work of eliminating grade crossings authorized by acts of Congress approved February 12, 1901, and February 28, 1903, has been completed, with the exception of a bridge over the Philadelphia, Baltimore and Washington Railroad Company's tracks at New Jersey avenue SE. The construction of this bridge is in progress, and when completed there will be left to be done in connection with this project the acquisition of a new street across the plaza from North Capitol and D streets to the west fountain in front of the Union Station, and the paving of the streets in the plaza and the intersecting streets with a permanent material. Negotiations for the purchase of the land for this new street are pending. The paving of the streets on the plaza can not be done until the fill upon which the plaza was constructed has had sufficient time for settlement.

The acts of Congress above referred to provided for the elimination of grade crossings within the city limits and for a small piece of territory lying to the north thereof. There still exists, however, a number of grade crossings on much-traveled highways, such as Bennings road, Cedar street in Takoma Park, Pennsylvania avenue extended, and other less important streets. It is estimated that to provide for eliminating the grade crossings at these points will cost \$450,000, and the commissioners believe that this work should be classed as a permanent improvement project to which reference has been made in another part of this report. No grade crossings should exist within the limits of the District of Columbia.

GRADE DAMAGES.

The work of the grade damage claims commission in ascertaining the damages to private property caused by changes in the grade of streets and alleys due to the location of the Union Railroad Station and the elimination of grade crossings is still in progress. There were 89 claims for damages heard and determined, involving 146 pieces

of realty. In 46 of these cases damages were awarded landowners amounting to \$68,130, while in 23 of the cases the commission awarded no damages for the reason that they considered the benefits to the property, by reason of improvements made, offset whatever damage had accrued. Thirty-six cases were appealed from the awards of the commission by the Commissioners of the District of Columbia, or the property owners, and juries asked. A number of cases were compromised, and in this way the District of Columbia saved \$2,750; this sum representing the aggregate difference between the awards of the commission and the amounts for which the claims were compromised. The total number of claims filed before the commission since it was organized is about 800.

STREET RAILWAYS.

The extensions of the street-railway system to the Union Railroad Station authorized by act of Congress approved March 23, 1908, have been completed, and the cars are in operation.

The commissioners have jurisdiction over the construction of street railways, but only as to the police power over the operation of the cars. The operation of the railways, so far as it concerns the traveling public, was placed by the act above quoted under the Interstate Commerce Commission, which appointed to act in the matter a body known as the "District electric railway commission."

By act of Congress approved May 29, 1908, the Baltimore and Washington Transit Company, a corporation of Maryland, which had a line of railroad in Takoma Park, a suburb of the city, was authorized to extend its tracks along Third street extended, Kennedy street, and Colorado avenue to the tracks of the Capital Traction Company on Fourteenth street, extended. These new tracks are now in process of construction.

Arrangements are now being made by the Washington Railway and Electric Company to bring cars from Baltimore and Annapolis over its Columbia line to Fifteenth street and New York avenue NW. This will give a through electric street railway between Washington and Baltimore and Annapolis. These cars have heretofore been operated to Fifteenth and H streets NE, and the new arrangement will bring them to the business center of the city.

The commissioners believe that the Fourteenth street line of the Capital Traction Company should be extended via Kennedy street to and into Rock Creek Park for the purpose of affording transportation facilities to those desiring to make use of this park. While the details of this plan have not been worked out the commissioners hope that during the next session of Congress they will be able to present a plan providing for such extension.

The matter of the extension of the lines of the Washington Railway and Electric Company to Rock Creek Park is also under consideration.

The commissioners believe that a central passenger station for interurban and other electric cars would be of great convenience to the public and a source of profit to its builders. The station at Indianapolis, Ind., is an example of what is needed here. The structure should be of dignified character, so as to constitute an ornament to the city.

ROADWAY PAVEMENTS.

The total amount of funds appropriated by Congress and deposited by public service corporations and others in connection with the paving of roadways, sidewalks, and alleys aggregates about \$1,250,000. Of this amount \$472,000 was appropriated for constructing new asphalt and asphalt block pavements on the roadways of streets, and repairing and replacing the surface of roadways on streets already paved. About \$211,000 was appropriated for the construction and repair of suburban streets and county roads, exclusive of sheet asphalt and asphalt block pavements, outside of the city limits.

The materials used in roadway pavements were sheet asphalt and asphalt block. The prices paid for the fiscal year 1909 were:

	Per square yard.
Laying sheet asphalt.....	\$1. 48
Laying vitrified brick gutters in connection therewith.....	1. 17
Laying asphalt block pavement:	
In old city limits—	
5-inch block.....	1. 80
4-inch block.....	1. 65
Outside of old city limits and west of Rock Creek.....	1. 80

The prices for laying sheet asphalt pavement and vitrified brick gutters for the current fiscal year are as follows:

	Per square yard.
Laying sheet asphalt pavements.....	\$1. 45½
Laying vitrified brick gutters.....	1. 21

The prices for laying asphalt block pavements for the current fiscal year are as follows:

	Per square yard.
Laying 4-inch asphalt block pavements:	
Within city limits.....	\$1. 65
Outside city limits.....	1. 80
Laying 5-inch asphalt block pavement within city limits.....	1. 80
Laying 3-inch asphalt block pavement on a 4-inch concrete base.....	2. 00

RESURFACING WORN-OUT PAVEMENTS.

The sum of \$300,000 was appropriated for the fiscal year 1909 for resurfacing and repairs to asphalt pavements, and a similar amount has been appropriated for the current fiscal year. This sum is inadequate to properly carry on this work. Many of the asphalt pavements now laid on the streets have been down for from 20 to 37 years, and as about 20 years represent the effective and economical life of such pavements, about 30 per cent of all our sheet asphalt pavements may be classed as worn-out. It is the policy of the commissioners to repair the pavements by patching until a time comes when the pavement becomes so worn-out it is no longer economical to make such minor repairs; it is then necessary to lay a complete new surface over the foundation. This is very expensive on long stretches of streets, and with the appropriations heretofore made it has been impossible to keep the streets in good shape. The commissioners in their estimates for the ensuing fiscal year have asked for an appropriation of \$440,000 for this purpose. Unless at least \$400,000 is appropriated annually, the average age of all the pavements will continue to increase; that is to say, there will be a progressive deterioration of the street surfaces.

A new method of repairing and resurfacing asphalt pavements has been given a test during the current year. This is by means of what is known as the "heater method." By the use of a large patented heating machine the old surface is heated through and the upper crust taken off; new asphalt material is then placed on the surface and rolled. Good results are being obtained, and it is believed that this method of resurfacing will prove more economical than the old method of removing the top surface by cutting out.

SIDEWALKS AND ALLEYS.

About \$200,000 was expended in paving sidewalks and alleys. Sidewalks are constructed of cement, and alleys are paved with vitrified or asphalt blocks. The prices paid under contract for laying cement sidewalks during the fiscal year were as follows:

	Per square yard.
Within the city limits.....	\$0.95
Outside the city limits.....	1.18

For the present fiscal year the prices are as follows:

	Per square yard.
Within the city limits.....	\$0.94½
Outside the city limits.....	1.20

The alleys are paved by day labor.

There is a constant demand for laying cement sidewalks, both for laying such walks in front of houses where no sidewalks exist and in replacing old brick walks. One-half of the cost of laying sidewalks and of paving alleys is assessed against the abutting property.

BRIDGES.

The bridge over the Anacostia River at the foot of Eleventh street east was completed and opened to traffic in December, 1908.

The old bridge at this point is being removed under an appropriation made in the last District appropriation act. It is expected the work will be completed December 1, 1909.

Contract has been made for widening the bridge across Piney Branch on the line of Sixteenth street extended, and work is in progress.

Attention is invited to the necessity for acquiring land immediately adjacent to the approaches to the Connecticut Avenue Bridge. This is necessary in order to prevent private building so close to the bridge as to destroy the æsthetic effect. Building operations already seriously detract from the appearance of the bridge.

SURVEYOR'S OFFICE.

The work of the office of the surveyor shows a very decided increase over that of the previous year. The fees received for work done for private parties amounted to \$20,544.76, while those of the previous year amounted to \$13,040.80. This increase of 57 per cent in the amount of fees received indicates a prosperous condition in the development of the District, as the work of the surveyor, which is intimately connected with that of building operations, is an index to the rapid increase of these operations.

The last District appropriation act provided for the purchase of an automobile field wagon for the use of field parties in the office of the surveyor. This modern mode of transportation has greatly increased the efficiency of the office and the rapidity with which the work is done. The total of the appropriations for the surveyor's office for the fiscal year was \$26,934. The amount of fees received for private work, as above indicated, was \$20,544.76. Besides the work done for private parties, this office makes surveys for the District of Columbia, which constitute a considerable portion of the total work done. These figures indicate that the office is self-supporting so far as concerns work done for private parties.

The surveyor recommends legislation authorizing him to record in his office the new square and parcel numbers given to all land within the limits of the District of Columbia, under the provisions of an act of Congress approved February 23, 1905. This act directed the commissioners to divide the District into squares and parcels, so that when agricultural land was subdivided it could be designated by new square numbers, and thereby prevent duplication and cause the elimination of local names of subdivisions.

The act stated, however, that this should be done only for the purposes of assessment and taxation, and did not provide for changing the records of the surveyor's office so as to conform to the new system of designation. This has been the cause of much confusion, as property owners in looking up their property refer to the new designations, while the records of the surveyor's office show only the old designations. It is the intention of the commissioners to recommend such legislation as, if enacted, will permit transfers of property by the new square and parcel numbers, instead of referring to the obsolete designations now carried on the books of the surveyor.

STREET AND ALLEY EXTENSIONS.

The following street-extension measures were enacted during the year, and condemnation proceedings were instituted to acquire the land: Girard street NW., west of Fifteenth street; widening of Twentieth street at Park road; extension of New York avenue from Fourth street east to Bladensburg road; extension of Rittenhouse street from Daniel road; extension of Massachusetts avenue SE. to Bowen road; extension of Ninth street NW. from Barry place to Euclid street; extension of Minnesota avenue SE. from Pennsylvania avenue to Sheriff road; and the opening of a new road along the Anacostia River to Giesboro Point. Thirteen condemnation proceedings were also instituted for the opening of alleys.

The assistant engineer of street and alley extensions also conducts negotiations for the purchase of land for municipal purposes, such as sites for schoolhouses, fire-engine houses, and police stations. Most of these sites are obtained by purchase, but in two cases condemnation proceedings were resorted to. The total amount expended in the acquisition of such sites during the year was \$170,026.64, of which \$163,169.92 was for school sites alone.

TREES AND PARKING.

The number of trees set out during the year was 3,988, an increase of 659 over the preceding year. The number of trees removed was

1,975. The number of trees on the streets and in school yards at the close of the year was 96,075, a net increase of 2,940 during the year. The mileage of streets planted with trees is 529.26, an increase in mileage during the year of 6.76. The amount expended in the planting and care of trees and parks was \$40,146.94.

The varieties of trees planted were ash, gingko, linden; Norway, silver, and sugar maples; pin, pyramidal, and red oaks; and sycamores.

Thirteen thousand one hundred and forty-three seedlings were planted in the nurseries. These seedlings when they attain proper growth will be used in street planting.

SEWERS.

The total length of sewers constructed during the year was 20 miles. The total length of sewers in the District of Columbia on June 30, 1909, was 541.26 miles. The total cost of the sewer system at the close of the fiscal year was for the sewerage system \$10,688,681.62. The cost of the sewage-disposal system was \$4,031,888.27.

SUBURBAN SEWERS.

The rapid building up of the suburban portions of the District of Columbia requires the extension of suburban trunk sewers. The commissioners estimate that in the next twelve years the amount necessary for this purpose will be \$2,000,000. This is one of the large projects which the Commissioners have mentioned elsewhere in this report, and which they believe should be carried on under the new system of financing such large projects; in the meantime they have included in their estimates for the fiscal year 1911 the sum of \$136,000 toward this work.

In connection with the subject of suburban sewers, attention is invited by the superintendent of sewers to the important subject of maintaining the two streams running through the District, namely, Rock Creek and the Eastern Branch, free from sewage pollution. These streams have their source in and flow through the State of Maryland before they reach the District of Columbia. While the sewerage plans for the District of Columbia provide for keeping them free from District sewage, by means of intercepting sewers, they form natural systems of drainage for large areas within the State of Maryland in which the population is increasing. The only practicable method of handling the matter so as to prevent the pollution of these streams where they flow through Maryland is to authorize by legislation the appointment of a sewage commission or board for the District of Columbia, which would act with a similar commission appointed by the governor of the State of Maryland, to arrange for the intercepting of all sewage which would under natural conditions flow into these streams, and the discharge of same through the sewage disposal system of the District. The present conditions are not such as to render this a matter of immediate urgency, but the subject is one which will need consideration in the future, and it is believed it is not too soon to begin a study of the problem. Rock Creek is a beautiful stream which flows through Rock Creek Park, a national park of over 1,600 acres, and every effort should be made to keep the stream free of pollution. The same argument would apply to the Anacostia

River, as with the flats existing there adjacent to the city of Washington, the sewage entering into the stream is deposited on these flats and exposed during periods of low water, creating a condition which is a menace to public health.

SEWERAGE PUMPING STATION.

The operations of the sewerage pumping station during the year included the handling of the sewage of substantially the entire District of Columbia, and of delivering it to the outlet on the Potomac River, about opposite Alexandria, Va. The total amount of sewage pumped was 22,938,000,000 gallons, and of storm water 810,000,000 gallons. The amount of coal used was 7,866,000 pounds. The pumping equipment met all requirements of the service for the year.

BUILDINGS.

The estimated value of building work during the year, not including the buildings of the United States Government, was \$14,785,059, which was an increase over the value of the building work for the preceding year of \$6,073,482; the number of permits issued was 9,905, an increase over the previous year of 1,008; the number of dwelling houses constructed was 2,170, an increase of 946 over the preceding year; the number of apartment houses, 78, an increase of 45 over the preceding year, and the number of business buildings 207, an increase of 72 over the previous year.

The distribution of the value of these improvements, including repairs to existing buildings, is as follows:

Section.	Buildings.	Repairs.
Northwest.....	\$3,461,307	\$957,597
Southwest.....	388,300	120,058
Northeast.....	1,105,020	71,257
Southeast.....	738,020	57,138
County.....	7,576,221	251,866
Total.....	13,268,868	1,457,916

There are estimated to be 52,563 brick buildings and 23,844 frame buildings in the District of Columbia; this is an increase during the year of 1,367 brick buildings and 1,050 frame buildings.

INSPECTION OF PRIVATE BUILDINGS.

All private building construction in the District of Columbia is inspected under the direction of the inspector of buildings. The total number of inspections during the year was 55,995, an increase over the previous year of 3,042. This work is done by 8 field inspectors, and each inspector makes about 24 inspections daily. The average time which can be devoted by each of these inspectors to a building is about fifteen minutes, which is not believed to be sufficient time to give to these inspections, but owing to the small force of inspectors provided by Congress for this work, this is the best that can be done.

The commissioners in their estimates for the ensuing fiscal year have asked for 2 additional assistant inspectors of buildings.

BUILDING REGULATIONS.

The work of revising the building regulations of the District of Columbia, which has been in progress for the last three years, has been completed, and the regulations will be put in force as soon as copies of them can be printed for distribution. One of the most important changes made was the reduction in the thickness of walls for two-story houses from 13 inches to 9 inches. The governing consideration in this matter was the undesirability of affecting rents adversely to the poorer tenants.

Such fees have been established for permits as will make the office of the building inspector practically self-supporting.

The regulations were amended in other respects so as to bring them up to modern requirements.

CONSTRUCTION OF MUNICIPAL BUILDINGS.

The following table shows the various municipal buildings constructed during the year, or now under construction, and their cost:

Description and cubic-foot cost of municipal buildings erected during the past year and under construction.

Name and location.	Cost.	Cubical contents.	Cost per cubic foot.	Description.
COMPLETED.				
Henry D. Cooke School, Seventeenth and Euclid.	\$101,664.36	707,604	<i>Cents.</i> 14.3	16-room brick.
Lucretia Mott School, Fourth and W nw.	96,182.81	654,782	14.7	Do.
McKinley Manual Training addition.....	53,800.00	176,259	30.5	Fireproof.
Thos. B. Bryan School.....	85,411.73	611,781	13.9	Fire resisting.
James A. Garfield School.....	85,461.50	611,781	13.9	Fireproof to roof.
Business High School addition.....	71,943.86	465,542	15.4	15-room brick.
Charles F. Powell School.....	54,629.00	332,177	16.4	8-room fire resisting.
Truck No. 10, K near Third sw.....	20,995.00	118,412	17.7	2-story brick.
Anacostia Police Station.....	17,691.19	105,836	15.01	Pebble-dash frame.
UNDER CONSTRUCTION.				
Strong John Thomson School.....	99,800.00	611,781	16.3	12-room fire resisting.

These buildings were erected under the supervision of the inspector of buildings, upon whom the law at that time placed the duty.

In the last District appropriation act the inspector of buildings was relieved of this duty, and the office of municipal architect was created. The law requires the municipal architect to prepare and supervise the plans for and superintend the construction of all municipal buildings, and the repair and improvement of all buildings belonging to the District of Columbia under the direction of the engineer commissioner.

Plans for the following buildings for which appropriations have been made are now being prepared under the direction of the municipal architect:

Addition to the Western High School; plans completed.

Addition to the Chevy Chase School; plans completed.

Two-room colored school, Brookland; plans will be completed December 1, 1909.

Eight-room school building, Cleveland Park; plans in preparation.

Potomac, eight-room school building; plans in preparation.

Engine house No. 23, G street, between Twenty-first and Twenty-second streets NW.; plans completed.

Public convenience station at Mount Vernon Square; plans completed.

Public convenience station at Ninth and F streets NW.; plans completed.

Public convenience station near Dupont circle; plans in preparation.

Engine house in the neighborhood of Minnesota avenue and Pennsylvania avenue SE.; site not yet donated, and plans not yet drawn.

REPAIRS TO BUILDINGS.

All municipal buildings are kept in repair by the superintendent of repairs, who during the year was under the direction of the inspector of buildings, but who during the present fiscal year has been placed under the direction of the municipal architect.

For school repairs the sum of \$75,000 was appropriated for work during the year, and in addition an appropriation of \$50,000 was made for fire protection in school buildings.

For repairs and improvements to engine houses \$9,000 was appropriated, and for repairs to police stations, \$5,500. These sums were practically all expended. In addition, this office expended on plumbing for public schools \$6,516.

ELEVATORS.

The elevators in the District of Columbia are inspected under the direction of the inspector of buildings. Two of the assistant inspectors of buildings are assigned to this work. They report that all elevators are in a generally good condition. The commissioners during the year made new regulations governing the licensing of elevator operators, and by this means the efficiency of these operators has been greatly increased. The number of elevator operators granted licenses since the new regulations were put in force is 423.

INSPECTION OF BOILERS.

The number of steam boilers inspected by the inspector of boilers was 514. This official is paid from fees paid by the owners of the boilers. The total amount received for such fees during the year was \$2,295, and the expense of inspection was \$418.90, leaving a net compensation to the inspector of \$1,876.10.

CONDEMNATION OF INSANITARY BUILDINGS.

The board for the condemnation of insanitary buildings examined 428 of such buildings, and issued orders requiring 231 to be demolished and 165 repaired. Of the buildings demolished 179 were located on streets and 52 in alleys, and of those repaired 115 were located on streets and 50 in alleys. The total number of buildings examined by the board since its creation on May 1, 1906, is 1,387, of which 786 were ordered demolished and 389 ordered repaired. Of the number demolished 511 were located on streets and 275 in alleys, and of those repaired 242 were located on streets and 147 in alleys. By reason of the demolition of houses during the year 462 adults and 295 children who occupied these houses were required to find other quarters. The assessed valuation of the buildings removed during the year was on streets \$35,600 and in alleys \$7,200.

The work of the board in requiring the removal of these insanitary buildings has been accomplished without the necessity of action of the courts and without using the appropriation available for removing such structures on the neglect or refusal of the owners to comply with the direction of the board. Two cases involving the removal of four houses are now pending before the courts.

Of the tenants required to find other quarters by reason of the removal of buildings demolished, 733 were colored and 24 were white. Many of these people have removed and others are removing to the suburbs in the outlying sections of the District and in the adjacent portions of Maryland and Virginia, where they rent or purchase cheap homes with fairly large sized lots; others rent rooms in other places in the city or occupy the cheaper class of two-family apartment buildings. There is a demand for the cheaper grade of modern houses to accommodate this class of people. In many cases insanitary conditions have been found due, not to the buildings themselves, but to bad housekeeping and general neglect. In general it may be stated that the work of this board during the year has been of great value in ridding the city of an undesirable class of houses.

PLUMBING AND PLUMBING INSPECTION.

During the year the plumbing office made 39,404 inspections, which was an increase of 9,857 over the number made during the previous year. This increase was due to activity in building operations.

The sum of \$50,000 was expended under the direction of the inspector of plumbing in making repairs and changes in the plumbing of the older school buildings so as to bring them up to modern sanitary requirements. The plumbing work in 11 school buildings was completely remodeled, and repairs to plumbing were made in 10 school buildings. This work is not yet finished, as many of the older school buildings still contain the old-style insanitary plumbing, and additional appropriations will be necessary to continue the work during the next fiscal year.

This office also has charge of the installation of plumbing in private residences under the compulsory drainage act, upon the failure of the owner of the premises, after notice, to do the work. There were 22 such cases on hand at the beginning of the fiscal year, and 47 new cases were received during the year, making a total of 69. After efforts on the part of the inspector of plumbing, the owners subsequently installed plumbing in 17 of these cases; in 10 other cases the work was done under the direction of the inspector of plumbing, at a cost of \$1,248.80, and assessments were made against the property to reimburse the expenditures made. The other cases are still pending.

PUBLIC-CONVENIENCE STATIONS.

The two public-convenience stations located at Seventh street and Pennsylvania avenue and Thirteenth street and Pennsylvania avenue NW. were in operation during the year, and the use of them by the public is steadily increasing. They were found especially valuable during the inauguration, and their use demonstrates the need of additional stations. Plans are in course of preparation for three new stations,

to be located in Mount Vernon square; on Ninth street NW., near F; and in the vicinity of Dupont circle. Additional points at which such stations could be well located are at Fifteenth street and New York avenue, on Pennsylvania avenue near Peace Monument, and at Thirty-second and M streets NW.

The total number of patrons reported at the two existing stations during the year was 2,232,584, an increase of about 15 per cent over the attendance during the last fiscal year. The average daily number of patrons was 6,116. These stations have free compartments and pay compartments. The fees received from the pay compartments amounted to \$1,191.44, an increase of 60 per cent over the receipts of the last fiscal year. The cost of operating the two stations was \$6,700.

PUBLIC BATHS.

Intimately connected with the question of public-convenience stations is that of the construction of public bathing places. The commissioners believe that such public baths should be constructed in Washington. These establishments exist in a number of cities, and the same reasons for their construction apply with great force to the city of Washington. There is a large class of people who have no bathing facilities at home, and it is this class which the public baths should reach. Their construction would promote cleanliness among the poorer population and would be a useful aid in general civic improvement.

ROCK CREEK PARK.

The appropriation for the care and maintenance of the park during the year was \$15,000, and authority was granted the board of control to purchase a small parcel, slightly less than 1 acre in extent, adjoining the northern boundary of the park, for a sum not to exceed \$400. Owing to some difficulties encountered regarding the title, this land has not yet been acquired, but steps are being taken toward that end. The balance of the appropriation has been expended in the general care and improvement of the park. This included the continuance of the grading and sodding of the public golf course; the construction of new footpaths and bridle paths, and sprinkling and maintaining the roadways. The commissioners ask an appropriation for the next fiscal year of \$20,000. With the additional amount it is proposed to begin an entrance to the park from Sixteenth street, by way of Piney Branch parkway, as well as to construct additional roads, shelters, and paths.

The commissioners believe that this large park should be made more accessible to the general public than it is at present. By the construction of roadways and bridle paths that portion of the public which uses horses and vehicles can readily obtain access to all parts of the park. The greater portion of the public, however, do not make such use of the reservation as is desirable, on account of the inadequate street car facilities. The nearest street railway lines are located at some distance from the park itself, requiring a walk of some length before the park is reached. Plans are under consideration for furnishing additional transportation, either by means of an extension of the street railway systems nearer to the park boundaries,

or by the use of busses, which could be operated from the existing car lines to and through the park. Great public interest has been manifested in the plans to make the park more popular, and the commissioners hope that their plans to do this will soon be realized.

The commissioners would call attention to two bills which have been pending in Congress for several years providing for the purchase of additional land to be added to the park. This land is situated along the line of Sixteenth street, and along Massachusetts avenue extended, and it should be acquired at once, as it is necessary to straighten out the boundary lines, and unless procured soon the rise in the value of land will be such as to make the future purchase almost prohibitive.

ROCK CREEK VALLEY IMPROVEMENT.

The commissioners again call attention to the necessity for the improvement of the valley of Rock Creek from Massachusetts avenue to the Potomac River. Plans and estimates were made for this work, and a report submitted to Congress. This report was printed as Senate Document No. 458, Sixtieth Congress, first session, and in it the commissioners recommended the open-valley method of improvement, which is estimated to cost \$4,750,000. This is one of the large projects of permanent improvement mentioned elsewhere in this report, and which the commissioners believe should be completed within the next ten or twelve years, provided that Congress authorizes by appropriate legislation a method of financing such large projects. This improvement should be executed in the near future, as the existing conditions are unsightly and insanitary and retard the proper development of this section of the city.

PARKS.

The commissioners believe that additional parks should be established in the District of Columbia. The only large public reservation is Rock Creek Park, which contains about 1,605 acres. The plans of the Senate Park Commission provide for the establishment of a chain of parks in that portion of the District outside of the city limits, and connecting them by parkways or boulevards. The commissioners believe that some such plan should be carried out in the near future, but owing to the large cost which would be involved in securing the land, which is tentatively estimated at \$5,000,000, this matter will have to be taken up under the proposed plan of financing permanent improvements. They believe that the present time is not too soon to prepare plans and surveys for locating such parks, and they believe that legislation should be enacted at the next session, authorizing the commissioners to prepare a comprehensive plan for a system of parks. The selection of the land for such parks should be made and money appropriated from year to year gradually to acquire the land before it is built upon.

TRANSFER OF CONTROL OF PARKS TO THE COMMISSIONERS.

The commissioners again recommend the transfer to their jurisdiction of the system of parks in the city of Washington, exclusive of the grounds around the White House and the government buildings.

Jurisdiction over these parks is now placed by law under the Chief of Engineers of the United States Army, and the commissioners recommend either that the entire control be transferred to them or that a board of control, such as that which has charge of Rock Creek Park, consisting of the Commissioners of the District of Columbia and the Chief of Engineers of the United States Army, be given entire control of the park system, with the exceptions above noted. The cost of maintaining these parks is shared by the citizens of the District of Columbia, and it seems but proper that the commissioners, who are the executive authorities of the District, and responsible for the collection and disbursement of money for municipal purposes, should have charge of the parks as well as other municipal establishments. Under the present arrangement Congress appropriates money for the maintenance of these parks, one-half of which is charged against the citizens of the District of Columbia, and the commissioners have no opportunity to make any recommendations as to such expenditures, although, in preparing their own estimates, they must take into consideration the amount of the revenues and provide for expenditures justified by such revenues. If the control of the parks were under the commissioners, their improvement could be considered in connection with other public improvements and the parks given their relative share of money available.

HARBOR FRONT.

The commissioners desire to call attention to the urgent need for the improvement of the harbor front. Plans for this work were forwarded to Congress May 23, 1908, and printed as Senate Document No. 519, Sixtieth Congress, first session. The commissioners in their estimates for last year asked for an appropriation of \$300,000 to begin the work of improvement in accordance with these plans, but no appropriation was made. The estimated total cost of the improvement of the Washington channel frontage, which is the most important, is \$1,426,000, and the total cost of the improvement of the balance of the river frontage, including the purchase of water front along the Potomac and Anacostia rivers, in accordance with the recommendations contained in said report, is \$2,880,000.

The improvement of conditions along the Washington Channel is most urgent. This water frontage is owned by the United States, and is placed by law under the control of the commissioners. It is leased to persons and corporations engaged in excursion and river traffic, and in those branches of commerce which are connected with water transportation. No funds have ever been appropriated for improvement, and what little has been done in the way of improvement has been done at the expense of the lessees. This improvement has not been made in any systematic manner, and consists of only such remodeling of old structures as is necessary to carry on business. Probably no city in the country has a more picturesque water front than Washington, and with the expenditure of not a large sum of money the water front could be made one of the most attractive features of the nation's capital, and at the same time increase the facilities for commerce. The present condition of this frontage is one of dilapidation. Old frame structures, built many years ago, still stand, no repairs having been made on them probably since they

were built. The wharf structures are hardly in safe condition, and no dredging of the slips has been done for years. Among the improvements which could immediately be begun would be the building of a sanitary fish and oyster wharf, and the construction of a municipal dock, with the second story used as a recreation pier. This municipal dock could be used by shippers whose business is not sufficiently large to justify the leasing of an entire dock, and the recreation pier would be a civic improvement, which could be furnished at not a great cost.

The receipts from the rental of wharf property during the year amounted to \$16,604.50.

This is one of the large projects for permanent improvement which the commissioners have referred to elsewhere in this report, and which should progress toward completion by annual appropriations under a proper system of financing such projects.

WATER REVENUES.

During the year 2,036 additional buildings were connected with the public water system. The revenues for the year were \$572,752.74. This sum is an increase over the revenues of the previous fiscal year of \$25,244.79. These revenues are made up from assessments levied for water mains, water rents, sale of water taps, and stopcocks, and charges for use of water for building purposes. The estimated revenue for the present fiscal year is \$584,000.

WATER METERS.

One thousand six hundred and seventeen water meters were installed by the water department in private residences during the year. The total number of meters in private residences at the close of the year was 12,116. In addition to these there are 2,463 meters in business establishments, making a total number of meters in service of 14,579. This is 24 per cent of the number of water-service connections, which is 60,117.

The meters in private residences are installed and the cost paid out of the water funds. Owing to the lack of funds which could be devoted to this purpose, very little progress was made in the installation of these meters during the year. The average cost of installing such meters is \$15.94, of which \$8.50 is for the meter. The average annual cost per meter for maintenance is 26 cents. The rate charged for water on metered service is 3 cents per 100 cubic feet, with a minimum rate to all consumers of \$4.50 per annum. Water-rent bills are delivered to the householders annually at the minimum rate, and if on actual measurement water is found to have been used in excess of this rate a bill is rendered for such excess.

By reason of the installation of meters not only has the waste of water been checked, but the average cost of water to the householder has been reduced from that which prevailed under the old method of charging for water by the front foot and height of premises. As an illustration, on an average house the rate under the old schedule was \$7.12, and under the meter system \$4.88, a saving to the consumer of \$2.24.

WATER MAINS.

Eighteen miles of water mains were laid during the year, making a total length of water mains in use at the end of the fiscal year of 478 miles.

One hundred and twenty additional fire hydrants, 34 public hydrants, and 7 public fountains were erected during the year, and 137 fire hydrants, 50 public hydrants, and 3 public fountains were abandoned, making the total number in service as follows: Fire hydrants, 2,542; public hydrants, 241; public fountains, 128.

There are also in service 11 shallow wells and 30 deep wells.

PREVENTION OF WATER WASTE.

Notable results were obtained during the year in the direction of decreasing water waste. By the use of the pitometer many underground leaks were discovered and repaired, and a careful house-to-house inspection was made to discover leaks in plumbing fixtures. These measures, together with the increased use of water meters, which are being installed as rapidly as the water department funds will admit, caused the daily consumption of water to be reduced from 64,500,000 gallons to 61,200,000 gallons, while during the same period there was a population increase of about 6,000. The waste of water discovered by these means aggregated 9,561,000 gallons per day.

The flow of water to all of the principal buildings under the control of the United States Government was measured, and the aggregate daily flow was found to be 8,583,000 gallons, or 14 per cent of the entire water supply of the District of Columbia.

EXTENSION OF WATER MAINS TO SUBURBAN SECTIONS.

The extension of water mains for the service of suburban communities in the District of Columbia outside of the city of Washington is much needed. It is estimated that during the next ten or twelve years \$800,000 will be necessary to carry on this work. This is one of the large projects which the commissioners have mentioned elsewhere in this report, and which they believe should be carried on under the new system of financing such large projects. In the meantime they have included in their estimates for the fiscal year 1911 the sum of \$106,000 for extending the water system to Twining City and Congress Heights, which are populous communities in the suburbs, in the southeastern section of the District. Ordinary extensions of water mains are made from the water fund, but with the use of these funds it has been impracticable to extend the water system as rapidly as should be done to furnish water facilities to build up suburban sections.

TRANSFER OF WASHINGTON AQUEDUCT AND FILTRATION PLANT TO THE COMMISSIONERS.

The bill introduced in the last Congress providing for the transfer of the Washington Aqueduct and filtration plant to the commissioners failed to become a law, and the commissioners earnestly recommend that such a law be passed at the next session of Congress. The

jurisdiction over the water-supply system is now placed by law under the Chief of Engineers of the United States Army, while the jurisdiction of the water-distribution system is under the commissioners. It would tend to much better administration if the entire water system was under one control. The division causes a division of responsibility, the duplication of work, and the employment of a duplicate force. Part of the water mains are under the control of the War Department and part under the control of the commissioners. The water distributed flows from one set of mains to the other and back again in the supply of government and private buildings. The Chief of Engineers has recommended such a transfer.

PLANS FOR FUTURE IMPROVEMENTS.

The commissioners in preparing their annual estimates for the fiscal year 1911, were limited by law to a figure double the amount of the estimated revenues. They found that this method of preparing the budget was sufficient to meet all current needs, in accordance with reasonable standards of efficiency, but would not adequately provide for carrying out large projects for which plans have been authorized by Congress, or which, while no plans have been prepared, will be needed in the near future. Included among the large projects heretofore and now recommended by the commissioners are the reclamation of the Anacostia flats, at an estimated cost of \$2,552,320; the improvement of the valley of Rock Creek from Massachusetts avenue to the mouth of the creek, which is estimated to cost \$4,750,000; the improvement of the harbor front, estimated to cost \$2,880,000; the purchase of land to extend the park system, estimated to cost \$5,000,000; the erection of buildings for a reformatory and workhouse, estimated to cost \$1,000,000, plans for which projects have been authorized by Congress; and the installation of a high-pressure fire-protection system, estimated to cost \$750,000; the extension of suburban trunk sewers, estimated to cost within the next twelve years \$2,000,000; the extension of trunk water mains for the suburban sections, estimated to cost \$800,000; the extension of the municipal hospital, at an estimated cost of \$150,000; and the elimination of dangerous grade crossings outside of the city limits, estimated to cost \$400,000; which projects, although highly necessary, have not yet been authorized in terms by Congress.

The commissioners realize that to carry on such projects by means of appropriations from year to year, some definite method of financing them will have to be provided, and at the same time provision must also be made for paying off the indebtedness already incurred under previous forms of government in the District of Columbia, as evidenced by bonds, and by advances already made from the United States Treasury. It is their intention to submit at the next session of Congress proposed legislation designed to provide a method for carrying out these large projects, at the same time paying off the indebtedness of the District and providing for current expenditures, all within the limits of the present provision of law requiring that the estimates shall not exceed double the amount of the revenues. To do this it will be necessary to set aside each year a portion of the

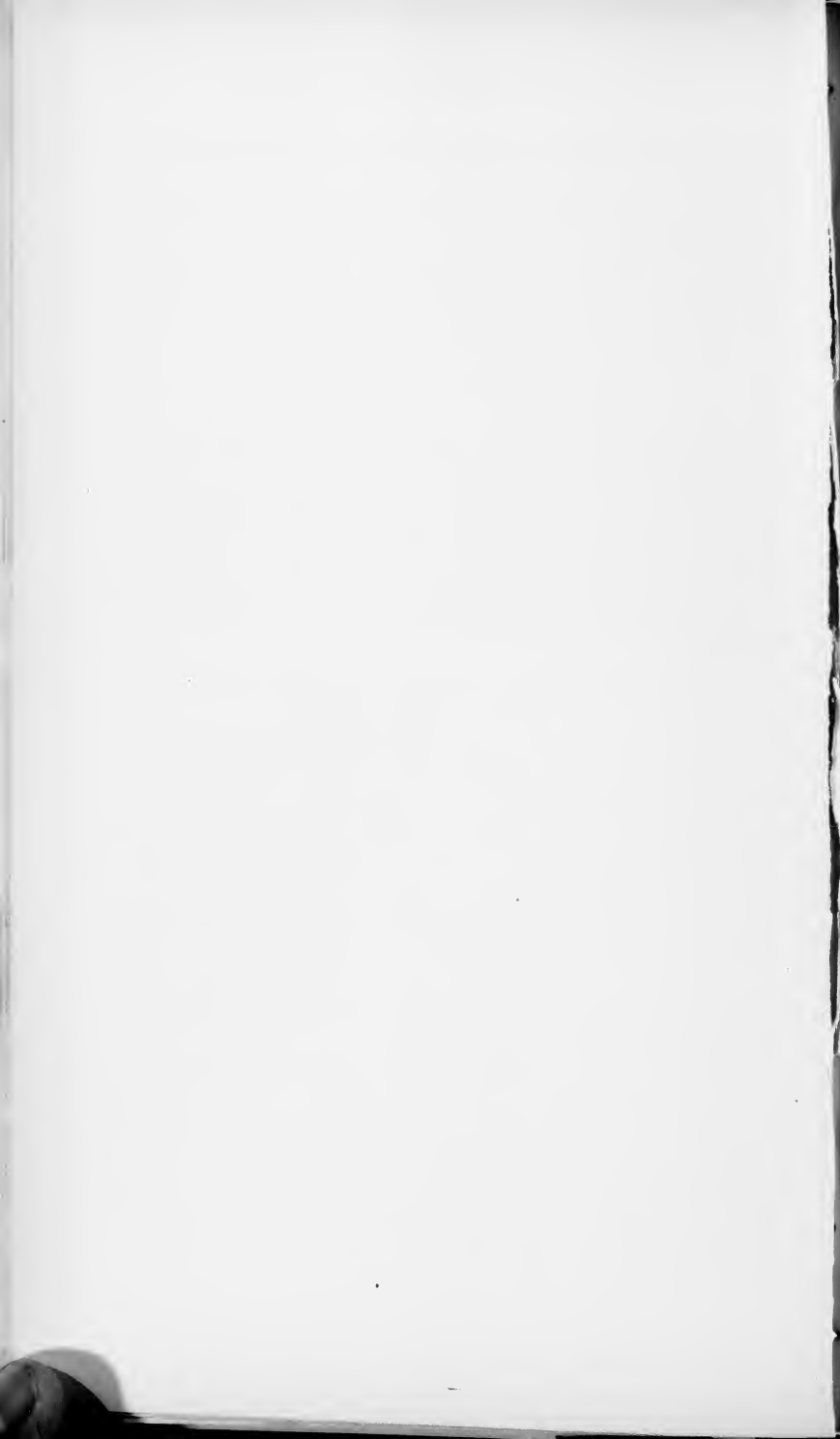
revenues for the purpose of paying the debt, and another portion for carrying on the large projects, and for outlay on permanent improvements.

In order that the plan may be carried out, the time within which the existing debt is to be paid must be extended to a period of about twenty-five years, and the commissioners directed to include in their estimates of appropriations for permanent work of improvement a sum equal to \$1,130,000, beginning with the fiscal year ending June 30, 1912, and annually thereafter an amount equal to the same sum, increased by the sum of \$100,000 for each succeeding fiscal year, until and including the fiscal year that ends June 30, 1923. This latter sum is one-fifth of the estimated increment of funds available for expenditure; that is, one-fifth of the sum of \$500,000, made up of \$250,000, the estimated annual increase in District revenues, and an equal contribution from funds of the United States. The remaining four-fifths of this increment, the commissioners believe, will be ample to care for the annual increase in the aggregate of the items included in their estimates to be devoted to current needs. This plan will provide for financing such large projects as are now contemplated within a period of about twelve years, ending in about the year 1923, and if the same plan be carried out thereafter, will also provide for similar projects, the need for which will probably arise before the end of this period, at which time much larger sums will be annually available.

Very respectfully,

HENRY B. F. MACFARLAND,
HENRY L. WEST,
WILLIAM V. JUDSON,

Commissioners of the District of Columbia.



REPORT OF THE OPERATIONS OF THE ENGINEER DEPARTMENT.

SURFACE DIVISION.

Capt. EDWARD M. MARKHAM.

Corps of Engineers, United States Army, Assistant to the Engineer Commissioner, in charge.

HIGHWAYS (STREETS, ROADS, BRIDGES, ETC.).....	C. B. HUNT, <i>Engineer of Highways.</i>
Sidewalks and alleys.....	H. N. MOSS, <i>Superintendent of Streets.</i>
Construction and maintenance of county roads.....	L. R. GRABILL, <i>Superintendent of County Roads.</i>
Construction and care of bridges.....	W. J. DOUGLAS, <i>Engineer of Bridges.</i>
STREET EXTENSIONS.....	E. M. TALCOTT, <i>Assistant Engineer.</i>
ASPHALT AND CEMENT.....	J. O. HARGROVE, <i>Inspector of Asphalt and Cements.</i>
SURVEYOR'S OFFICE.....	M. C. HAZEN, <i>Surveyor, District of Columbia.</i>
TREES AND PARKING.....	TRUEMAN LANHAM, <i>Superintendent of Trees and Parking</i>
GRADE DAMAGES.....	A. L. SINCLAIR, <i>Special Assistant Counsel.</i>

REPORT OF ASSISTANT IN CHARGE.

OFFICE OF THE ENGINEER COMMISSIONER
OF THE DISTRICT OF COLUMBIA,
Washington, October 9, 1909.

MAJOR: I have the honor to transmit herewith annual reports, giving in detail the operations during the fiscal year ended June 30, 1909, of the surface division, the surveyor's office, the parking commission, the office of street extensions, the office of the inspector of asphalt and cements, and the special assistant corporation counsel in charge of grade damages. In the report of the surface division is included the reports of the engineer of highways, the superintendent of streets, the superintendent of roads, and the engineer of bridges.

Very respectfully,

E. M. MARKHAM,
Captain, Corps of Engineers, U. S. Army,
Assistant to the Engineer Commissioner.

Maj. WM. V. JUDSON,
Corps of Engineers, U. S. Army,
Engineer Commissioner, D. C.

REPORT OF THE ENGINEER OF HIGHWAYS.

WASHINGTON, D. C., October 9, 1909.

CAPTAIN: I have the honor to submit the following report of the operations of the surface division of the engineer department of the District of Columbia for the fiscal year ended June 30, 1909.

The total amount of funds appropriated by Congress and deposited by corporations and others for disbursement by the surface division during the fiscal year ended June 30, 1909, aggregated about \$1,250,000, of which about \$200,000 was for paving sidewalks and alleys in all parts of the District of Columbia; \$472,000 was for paving new roadways and for repairing and repaving old roadway pavements; about \$211,000 was for construction and repair of suburban streets and county roads; exclusive

of sheet asphalt and asphalt block roadways; \$15,000 for grading streets and alleys; about \$41,000 for the maintenance and construction of all bridges in the District; about \$150,000 in connection with the elimination of grade crossings; while approximately \$161,000 was spent in repairing pavements disturbed by excavations on account of other branches of the District government and by various corporations and plumbers.

Summary statement of work done under appropriations for "Improvement and repairs" and "Elimination of grade crossings" for year ending June 30, 1909.

Character of work.	Improvements and repairs.			Elimination of grade crossings.	Total.
	Streets and avenues.	County roads and suburban streets.	Repairs to asphalt pavements.		
Street asphalt paving.....square yards..	45,301.14	3,566.63	71,412.59	19,145.75	169,426.11
Asphalt resurfacing.....do.....			42,020.14		42,020.14
Vitrified-block gutters.....do.....	3,991.54	524.90	10,475.39	2,605.83	17,597.66
Asphalt-block paving.....do.....	7,083.50	7,002.01			14,085.51
Granite-block paving.....do.....		1,910.60		12,925.95	14,836.55
Macadam.....do.....		42,127.00			42,127.00
Cobble gutters.....do.....		11,491.00			11,491.00
Ordinary grading.....cubic yards..	8,000.00	85,961.15	4,903.00	10,314.23	109,178.38
Macadam grading.....do.....	4,956.24	1,475.08		1,489.07	7,920.39
Old asphalt removed.....do.....			13,050.67		13,050.67
Old cobble and granite removed, square yards.....					
Old curb removed.....linear feet..	20,961.73	2,497.82		10,171.00	33,630.55
Curb set.....do.....	12,270.65	1,127.35	11,422.14	4,936.00	29,756.14
Curb reset.....do.....	17,418.88	16,175.93	12,311.60	14,125.83	60,032.24
	10,240.76	3,663.32	19,851.22	648.56	34,403.86

The principal items of work under the appropriation for "Repairs to roads" were the following:

Macadamizing Woodley road between Cathedral avenue and Thirty-fourth street; Wisconsin avenue between Fulton and Garfield streets; Connecticut avenue between Pierce Mill road and Chevy Chase circle; Rock Creek Church road from Riggs road to the Soldiers' Home; Nichols avenue between Livingston road and Good Hope road.

The following is a list of tables appended to this report:

Table A.—Street railways in the District of Columbia, July 1, 1909.

B and C.—Statement of character and extent of street pavements.

E.—Schedules of work on streets and avenues and county roads and suburban streets.

F.—Repairs to asphalt and concrete pavements.

H.—Work done by day labor under appropriation for "Repairs to streets, avenues, and alleys."

I.—Regular permit work.

K.—Assessment work.

L.—Replacing and repairing sidewalks and curbs around public reservations.

M.—Miscellaneous work.

N.—Whole-cost work.

O.—Repairs to cuts made by plumbers and others.

P.—Grading by chain gang.

As an incident to the year's operations, the repairing of sheet-asphalt pavements by the heater method was given a trial, which is believed to promise successful results. The apparent advantages in economy to be expected justified a modification in the existing contract for street repairs, so as to permit the use of this method on several streets, the cost of which was carefully tabulated, and whose further behavior under traffic will justify or otherwise a continuation of the use of this apparatus. About 25,000 cubic yards of trap macadam from the District's quarry at Dickerson, Md., were used on the suburban roads during the year, with continued excellent results, which fully justify the somewhat high cost of the material at the site of the work.

Under legislative authorization approved May 23, 1908, the street-car lines of the city were extended to the Union Station and certain extensions of the Capital Traction Company to the eastern section of the city were authorized. The work was completed within the time provided by law so far as that time limit has been reached, a portion of the work being permissible of completion by November 1, 1909. These extensions resulted directly and indirectly in a large amount of unusual

work of an engineering nature during the year, which, however, was successfully accomplished.

The new Anacostia River bridge was completed during the year and opened to traffic. The old bridge will be removed at an early date, under provision in the appropriation act for 1910.

ELIMINATION OF GRADE CROSSINGS.

The completion of the New Jersey Avenue Bridge over the tracks of the Philadelphia, Baltimore and Washington Railroad Company, and the approaches thereto, is the only considerable item to complete this project, except the paving with a permanent material of the Plaza and its intersecting streets. This latter work must of necessity await the settlement of the fill underlying them before the pavements can be laid with any justifiable hope that their integrity can be preserved.

I renew my recommendation of last year that such grade crossings of steam-railroad tracks as still exist outside the city limits be eliminated by progressively securing appropriations for the purpose, and would particularly suggest for early consideration the one at Takoma Park and the one at Bennings.

RECOMMENDATIONS.

I renew my recommendation of past years that the appropriation yearly made for "Construction of county roads" be aggregated into a single appropriation, to be expended on the roads named in the bill in a manner analogous to the operation of the schedule for paving streets within the city. About a score of items for suburban-street work are yearly segregated in an anomalous manner. They should be disbursed and accounted for as a single fund. The accounting office concurs in this recommendation.

I renew my recommendation made last year that collections of special assessments for improvements under assessment and permit work be credited in equal parts to the United States and the District of Columbia instead of to the current appropriation, and that appropriations as made by Congress be increased by the total of these collections, as shown by past experience. The amount to be expended would thus be known in advance, not only by Congress but by the office charged with the execution of the work under the appropriation.

My acknowledgments are due to the employees of the surface division for the work accomplished by the office during the year.

I respectfully transmit herewith the reports of the superintendent of streets, the superintendent of county roads, and engineer of bridges.

Very respectfully,

C. B. HUNT,
Engineer of Highways.

Capt. E. M. MARKHAM,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, District of Columbia.

REPORT OF THE SUPERINTENDENT OF STREETS.

WASHINGTON, D. C., October 25, 1909.

SIR: I have the honor to submit herewith the annual report of the operations under my charge for the fiscal year ended June 30, 1909. Table H is a summary of work done by day labor under the appropriation for "Current repairs to streets, avenues, and alleys." The cost of such work was \$48,846.13, including the repairs to 3,725 dangerous holes. One-third of this amount was sidewalk and alley work and the other two-thirds repairs to street roadways.

Table I is a list of work done under the permit system, wherein property owners requested the improvement and paid one-half the cost, the District paying the other half. The total cost of this work was \$21,093.82.

Table K is a list of work done under the assessment system. One-half of the cost of such work is charged against the abutting property. The total cost was \$183,260.85.

Table L is a list of work paid for from the appropriation for "Replacing sidewalks and curbs around public reservations and municipal buildings." The amount expended under this class of work was \$5,151.36.

Very respectfully,

H. N. MOSS,
Superintendent of Streets.

THE ENGINEER OF HIGHWAYS.

REPORT OF SUPERINTENDENT OF COUNTY ROADS.

WASHINGTON, D. C., October 25, 1909.

SIR: I have the honor to submit herewith the report of the operations of the county-road division during the fiscal year ended June 30, 1909.

Very respectfully,

L. R. GRABILL,
Superintendent of County Roads.

The ENGINEER OF HIGHWAYS.

Repairs to county roads, appropriation 1909.

Job No.	Location.	Cost.
SECTION 1.		
4000	Sprinkling various streets.....	\$3,665.00
4033	Woodley road, between Cathedral avenue and Thirty-fourth street.....	4,777.36
4035	Chevy Chase drive, from Chevy Chase Circle to McKinley street.....	379.44
4053	Garfield street nw., between Connecticut avenue and Twenty-seventh place.....	225.00
4057	Wisconsin avenue, south of Fulton street, to Garfield street.....	1,565.72
4086	West side Wisconsin avenue, across Yuma street and Nebraska avenue.....	58.37
4120	New Cut road, across Foundry Branch.....	219.45
4158	Connecticut avenue, between Ordway and Rodman streets.....	130.88
4159	Connecticut avenue, between Ordway and Sedgwick streets.....	303.56
4177	Nebraska avenue, between Loughboro road and Tunlaw road.....	230.56
4058	Fessenden street, from River road to Wisconsin avenue.....	38.75
4223	Newark street nw., between Thirty-third street and Highland avenue.....	18.25
4237	Wisconsin avenue.....	64.50
4240	Macomb street, east of Connecticut avenue.....	169.51
4249	Connecticut avenue, between Pierce Mill road and Chevy Chase circle.....	1,521.69
	Dangerous holes and minor repairs.....	13,368.04
		3,541.29
		16,909.33
SECTION 2.		
4000	Sprinkling various streets.....	5,696.50
4002	Fifteenth street nw., Florida avenue to Chapin street.....	1,733.03
4010	Fifteenth street nw., Florida avenue to Euclid street.....	218.00
4009	Massachusetts avenue to Wisconsin avenue.....	52.62
4013	Rock Creek Church road, from Riggs road to Soldiers' Home.....	1,856.93
4014	Caral road.....	238.65
4015	New Hampshire avenue, north of Park road, and section of Brightwood avenue north of Rock Creek Church road.....	1,368.67
4017	Columbia road, east of Brightwood avenue.....	182.25
4020	Fairmont street.....	177.80
4029	Girard street, between Brightwood avenue and Thirteenth street.....	142.30
4031	Eighth street nw., Barry place to Euclid street.....	160.25
4039	Fourteenth street extended from Monroe to Decatur streets.....	836.37
4048	Fairmont street, east of Brightwood avenue.....	45.28
4049	Harvard street, east of Brightwood avenue.....	117.38
4050	Kalorama road, west of Sixteenth street.....	379.51
4052	West side Ontario road nw., south of Kalorama road.....	363.06
4055	Seventeenth street nw., from Kalorama road to Columbia road.....	233.37
4067	Newton place, east of New Hampshire avenue.....	76.11
4065	Connecticut Avenue Bridge and various streets.....	962.49
4069	Klingle road, from Park road to Zoo.....	139.25
4070	Fairmont street, Eleventh to Thirteenth streets.....	148.31
4071	Nineteenth street, between Lamont street and Park road.....	613.37
4078	Proposal of G. W. Forsburg.....	18.00
4080	Sixth street and Piney Branch road ne.....	27.50
4083	Streets in Petworth.....	365.50
4097	Riggs road, from Rock Creek Church road to District of Columbia line.....	927.75
4098	Oakdale place, Elm, and other streets.....	370.75
4110	Fifteenth street nw., north of Florida avenue, and Woodley lane, south of Klingle road.....	78.75
4112	Various streets (treat with tar).....	539.84
4119	Adams Mill road.....	120.35
4135	Newton place, east of New Hampshire avenue.....	199.13
4137	Elliott place and Clark place.....	155.20
4166	Eighth street from Florida avenue to Barry place.....	57.88
4167	Morton street from Sherman avenue eastward.....	377.30
4184	Lamont place, between Park place and Warden street.....	159.25
4225	Fourth street nw., W to Bryant street, and Florida avenue, between Seventh street and New Jersey avenue.....	206.81
4239	East side of Fourteenth street nw., from north line of "Saul's subdivision" to Delafield street.....	183.44
4248	Fourth street nw., between W and entrance to Reservoir.....	216.69
4251	Various sections (weed killing).....	208.00
4252	Champlain street, between Kalorama road and Florida avenue.....	50.50
4279	Brown street nw., from Monroe to Oak streets, and Oak street, from Center to Seventeenth streets.....	101.10

Repairs to county roads, appropriation 1909—Continued.

Job No.	Location.	Cost.
SECTION 2—continued.		
4193	Park road, from Sixteenth to Seventeenth streets nw., and Seventeenth street from Park road to Kilbourne.....	\$484.87
4201	Kenyon street, east of Georgia avenue.....	153.75
4037	Repairs to steam roller.....	108.50
4233	.....do.....	169.30
4254	Georgia avenue, from Buchanan to Farragut.....	843.13
4262	Twentieth street, from Biltmore to Woodley road.....	251.94
4266	Piney Branch road, from Fourteenth street to Cedar.....	35.50
4281	Georgia avenue, between Allison and Longfellow.....	186.74
4282	Various streets (oil).....	177.56
4283	Sixteenth street, Mount Pleasant.....	104.54
4290	Military road.....	91.50
4298	Harvard street, Georgia avenue to Sherman avenue.....	39.25
	Dangerous holes and minor repairs.....	22,751.82
		10,745.41
		33,497.23
SECTION 3.		
4000	Sprinkling various streets.....	2,988.25
4001	Second and N street property yard (steel tank).....	133.52
4028	V street ne., from Third to Fourth streets.....	132.25
4040	Morse street ne., between West Virginia avenue and Twelfth street.....	468.25
4054	Morse street ne., east of West Virginia avenue.....	161.44
4066	Streets in Brookland.....	679.48
4068	East side of Twenty-fourth street ne., south of Rhode Island avenue.....	110.92
4079	Fourteenth street ne., south of Rhode Island avenue.....	7.25
4087	Channing street nw., between First and North Capitol.....	544.19
4111	Streets in Ivy City.....	172.92
4125	Seaton street ne., between Lincoln avenue and Second street.....	114.62
4136	Seventeenth and Lawrence streets ne.....	61.24
4144	Third, W, and Fifth streets ne., Center Eckington.....	191.38
4147	West Virginia avenue, from Florida avenue to Morse street.....	17.25
4148	Newton and Thirteenth streets ne.....	69.50
4156	Queen's Chapel road, north of Bladensburg road.....	42.25
4157	Hamlin street ne., east of Rhode Island avenue.....	45.06
4185	Intersection of Fourteenth and Kearney streets.....	38.50
4204	North Capitol street, from V street to Soldiers' Home.....	118.56
4205	Michigan avenue, from North Capitol street to Brookland.....	389.75
4220	Rhode Island avenue ne., from Twentieth street to South Dakota avenue.....	359.50
4221	South Dakota avenue at Irving street.....	80.75
4192	Ivy City.....	444.12
4203	Queen's Chapel road, from Brentwood road to Rhode Island avenue.....	96.75
4238	Michigan avenue, opposite entrance to Catholic University.....	55.00
4232	Queen's Chapel road, between Bunker Hill road and Monroe.....	514.00
4241	Intersection Twenty-second and Lawrence streets ne.....	69.95
4202	W street nw., between First street and alley, east.....	25.50
4221	South Dakota avenue at Irving street ne.....	80.75
4268	Twelfth street ne., Otis to Quincy streets.....	20.10
	Dangerous holes and minor repairs.....	8,233.00
		10,365.91
		18,598.91
SECTION 4.		
4000	Sprinkling various streets.....	2,200.00
4012	Nichols avenue, Livingston road to Good Hope road.....	1,463.00
4018	South side Maple avenue, between Chestnut and High streets.....	467.62
4027	Anacostia road from Bennings road to Sheriff road.....	130.25
4032	Alger place, between Bruce place and Hamilton road.....	736.06
4034	Fourth street se., south of Nichols avenue.....	155.29
4041	Wheeler road, south of Hamilton road.....	507.65
4056	Bennings road, between Sheriff road and Anacostia road.....	811.38
4082	Esther place, between Nichols avenue and Raleigh street.....	145.50
4084	L and South Capitol streets, to Anacostia (hauling).....	76.75
4085	Alley, square 6003 (grade).....	16.37
4088	West side of Bowen road.....	34.87
4122	Naylor road.....	230.95
4123	Pennsylvania avenue extended.....	323.45
4124	Fiftieth street ne., between Central avenue and Washington Railway and Electric Company's tracks.....	228.50
4134	Branch road, south of Bowen road.....	163.45
4145	Bowen road, from District of Columbia line to Good Hope road.....	876.05
4146	Bennings road.....	125.75
4149	Raleigh street se., between Nichols avenue and Seventh street.....	154.05
4175	East side Bennings road, from Anacostia road to Kenilworth road.....	25.37
4235	Bennings road.....	85.31

Repairs to county roads, appropriation 1909—Continued.

Job No.	Location.	Cost.
SECTION 4—continued.		
4261	Geisboro road.....	\$150.85
4269	Bennings road, from end of macadam to District of Columbia line.....	618.40
4272	Chester street se., south of W street.....	109.50
4280	Sheriff road.....	8.94
		9,846.81
Dangerous holes and minor repairs.....		2,619.72
		12,466.53

RECAPITULATION.

Section 1.....	\$16,909.33
Section 2.....	33,497.23
Section 3.....	18,598.91
Section 4.....	12,466.53
Total.....	81,472.00
Miscellaneous.....	340.28
Blacksmithing.....	351.75
Breaking stone.....	62.34
Road oil.....	2,861.83
Oil tank.....	699.00
Troughs.....	19.50
Tools.....	102.87
Sweeping machine.....	255.00
Coal.....	52.83
Traveling expenses.....	116.07
Hauling (Mullin).....	9,016.78
Gasoline engine.....	100.00
Horse and buggy (hire).....	624.00
Tarvia.....	377.65
Repairs to roller.....	367.50
Freight.....	70.54
Lumber.....	70.81
Pipe.....	91.19
Forage.....	27.00
Hardware.....	383.48
Steel and iron.....	294.99
Cotton waste.....	17.85
Paints.....	56.36
Repairs to road roller.....	11.14
Moving trees.....	48.99
Demurrage.....	8.00
Soap.....	17.75
Balance.....	2,082.50
Total.....	100,000.00



Results of oil and other dust preventives

Job No.	Location.	Date of work.	Area of road-way treated.	Appli-cations.	Area treated once.	Amount of oil used.	Amount of oil used per square yard.	Price.	Cost of oil and other material.
			<i>Sq. yds.</i>		<i>Sq. yds.</i>	<i>Gallons.</i>	<i>Gallons.</i>		
4010	Massachusetts avenue, upper end.	July 1-6...	5,000	1	5,000	4,110	0.822	\$0.04	\$164.40
	Livingston road.....	June 16....	11,152	1	11,152	8,152	.731	.06½	529.88
4012	Good Hope road and Nichols avenue.	July 14....	18,600		18,600	10,478	.563	.04½	445.32
4014	Canal road.....	July 6-9...	4,791		4,791	3,948	.824	.04	157.92
	New Hampshire avenue, north of Park road.	June 8 to July 31.	4,500	(a)	358,200	b 8,400	.211	.04½	409.22
4015	Brightwood avenue, Rock Creek Church road to Madison.		35,300						
	Bennings road.....	Aug. 1-31	7,000	1	20,000	{ 4,500 3,646 5,523 }	.683	.04½	599.47
4056	Sheriff road.....		5,000						
	Kenilworth road.....		8,000						
	Streets near Union Station Plaza.		14,400	(c)	d 93,000	3,400	.183		425.00
6029	Area for Washington Terminal Co.		4,200						
	Roadway of Connecticut Avenue Bridge.		4,000						
	Lamont School.....	Aug. 15-31		(d)					
4065	Newton, Fourteenth to Eighteenth.								
	Sixteenth, Irving to Oak.								
	Park road, Fourteenth to Seventeenth.	Sept. 15- Oct. 15.	21,150	1	d 21,150	3,200	.151	.12½	400.00
	Woodley lane.....		1,850						
4110	Fourteenth, south of Webster.		294			(h)	.56		
	Park road, Seventeenth to Rock Creek Park entrance.	Oct. 9-19..			16,150	5,810	.36	.06½	377.65
4112	Thirteenth, Park to Otis.		16,150						
	Fourteenth, Taylor to Crittenden.								
	Kenyon, Sherman avenue to Thirteenth.				2,417.6		(i)		148.08
	Irving, Fourteenth to Sixteenth.		2,417.6						
Contract.	Massachusetts avenue, west of Rock Creek.		11,206.6		11,206.6				686.40

^a About 9 applications.^b 1,400 pounds soap, at 3.73 cents per pound, were also used.^c About 4 to 6 thin applications.^d Approximately.^e About 2 moderately heavy applications.

applied to county roads, 1908-9.

Cost of labor.	Total cost.	Cost per square yard of—		Cost per square yard treated.	Kind of oil used.	Length of time applications effective.	Condition of surface in March, 1908.
		Material.	Labor.				
\$52.62	\$217.02	\$0.0329	\$0.0105	\$0.0434	Gulf Refining Co., roadbed No. 2.	One season.....	Oil about gone; muddy.
.....	821.58	.0475	.0262	.0737	Indian Refining Co., liquid asphalt.	.....do.....	Oil about gone; very muddy.
199.10	644.42	.0239	.0107	.0347	Gulf Refining Co., roadbed No. 2.	.....do.....	Oil about gone; rather muddy.
80.81	238.73	.033	.0168	.0498	.....do.....	.....do.....	Oil about gone; rather muddy.
437.15	846.37	.0103	.011	.0213	{ Gulf Refining Co., No. 1 crude oil.	{ About 60 days with some watering.	{ Oil disappeared about Sept. 1.
211.43	810.90	.03	.0106	.0405	{ Gulf Refining Co., roadbed No. 2.	{ One season.....	{ Surface muddy.
52.93	477.93	.0228	.0028	.0257	{ Target brand asphalt. /	30 to 45 days, if watered.	No effect visible.
12.38	137.38	.0312	.0031	.0343			
55.38	455.38	.0216	.0027	.0215	Barber Asphalt Co., asphalt.	Put on too late to determine.	Surface cut up and muddy, but good. Good.
85.75	85.75	.....	.04	.04			
162.19	539.84	.0234	.01	.0334	"Tarvia B".....	.....do.....	Do.
84.77	919.25	.0612	.0062	.0675	{ Indian Refining Co., liquid asphalt.	{ At least one season under fair conditions.	{ West end good; east end muddy. Good except in worn spots.

/ Effect disappeared September 18 to October 1. This surface required only about one-third to one-half the amount of sprinkling while the effect of oil lasted.

g About 1 heavy application.

h About 1,200 gallons of oil used.

i About 0.6 gallon of oil to the square yard was used.

j Hired labor.

Total cost of material.....	\$4,468.34
Total cost of labor.....	1,726.21
	6,194.55
Total number of yards treated.....	158,561
Oil used of all kinds (about 8 carloads).....	62,167 gallons..
Cost of sprinkling with water.....	per square yard.. \$0.028

REPORT OF THE ENGINEER OF BRIDGES.

WASHINGTON, D. C., September 11, 1909.

SIR: I have the honor to submit the following report for the fiscal year ended June 30, 1909.

The expenditures under the construction and repair of bridges are as follows:

Expenditures, appropriation for "Construction and repair to bridges, 1909."

Bridge No.	Character of work.	Cost.
35	Minor repairs.....	\$50.00
34	do.....	209.00
82	Refloor.....	311.59
49	do.....	239.64
7	Aqueduct Bridge, building stairway.....	299.86
30	Steel-tie strut above pedestal.....	130.42
54	Lay new floor.....	2,626.46
34	do.....	633.60
1	Chain Bridge, concrete platform.....	103.52
35	Refloor.....	631.76
227	Site Piney Branch Bridge, drilling test holes.....	8.00
227	do.....	166.50
	Military road, lengthening culvert about 20 feet.....	353.78
55	Concrete steps and repaving roadway along same.....	408.56
	Minor repairs:	
	July 1-15, 1908.....	245.00
	July 16-31, 1908.....	179.75
	Aug. 1-15, 1908.....	94.00
	Aug. 16-31, 1908.....	131.46
	Sept. 1-15, 1908.....	420.46
	Sept. 16-30, 1908.....	590.62
	Oct. 1-15, 1908.....	410.36
	Oct. 16-31, 1908.....	389.45
	Nov. 1-15, 1908.....	390.50
	Nov. 16-30, 1908.....	278.25
	Dec. 1-15, 1908.....	88.00
	Dec. 16-31, 1908.....	530.22
	Jan. 1-15, 1909.....	4.00
	Jan. 16-31, 1909.....	10.75
	Feb. 1-15, 1909.....	1.00
	Feb. 16-28, 1909.....	154.25
	Mar. 1-15, 1909.....	33.00
	Apr. 1-15, 1909.....	63.41
	Apr. 16-30, 1909.....	40.36
	May 1-15, 1909.....	51.00
	May 16-31, 1909.....	47.12
	June 1-15, 1909.....	114.25
	June 16-30, 1909.....	81.75
	Miscellaneous supplies and repairs:	
55	48 steel castings and 48 steel angles.....	148.32
301	10 wire mesh railing panels.....	140.00
251	Contract with R. G. Israel, earth filling.....	2,357.41
55	12 piles furnished and driven, 5 pulled.....	129.00
	Steel beams, contract with Chas. Schneider.....	1,351.00
	800 gallons paint.....	796.25
	7 barrels paint.....	359.53
	Diaphragm pump.....	79.00
251	Repairs to sewer damaged by construction of bridge.....	141.31
	Miscellaneous tools.....	231.00
	Car tickets.....	20.00
	Photographic lens.....	174.00
	Photographic supplies.....	25.30
	Trip engineer of bridges to Boston.....	67.20
	Coal.....	20.70
	Salaries and transportation.....	2,500.00
	Miscellaneous supplies and labor.....	410.25
	Unexpended balance.....	739.15
	Total.....	20,211.07
	Amount appropriated.....	
	Repayment from—	20,000.00
	Capital Traction Co.....	160.37
	Washington Railway and Electric Co.....	28.00
	East Washington Heights Railway Co.....	22.70
	Total.....	20,211.07

Your attention is called to the necessity of modifying the existing lay out of streets immediately adjacent to the Connecticut Avenue Bridge, in accordance with the plan approved by the Engineer Commissioner, District of Columbia, so as to afford permanent protection against the unsightly construction of buildings near the bridge. The three houses which have been recently built at the north approach are, I believe, of sufficient evidence to show that if prompt action is not taken to protect this expensive structure from the encroachment of houses, almost the entire esthetic value of the bridge will be lost and the large sum of money expended will fail to beautify this section of the city to an extent commensurate with the expenditure.

The improvement of Rock Creek from Massachusetts avenue to L street should be executed as early as possible, as the existing conditions are unsightly, insanitary, retard the proper development of the abutting sections, and are a reflection upon the entire city of Washington. The improvement of the lower section need not be executed until there is an actual demand for a park connection between the Zoological and Potomac parks. Delay in carrying out this lower project will not add anything to its cost, whereas delay in the upper section will not only add materially to the final cost, but such delay will interfere with the proper execution of the plans. The improvement of the section between Massachusetts avenue and L street can not be effectively executed piecemeal. The money should be appropriated to purchase all the land necessary, and the work should then proceed systematically for the attainment of the completed project. A cursory study of the building construction in the vicinity of the proposed park will show at once the necessity for fixing, as soon as possible, the final location of the streets in this vicinity.

In connection with the improvement of this portion of Rock Creek, I have to invite your attention to the desirability of constructing the Q Street Bridge at an early date. The estimated cost of this bridge is \$179,000. It should not, however, be constructed until such time as Congress has definitely approved the open-valley plans, and the necessary land on the line of this bridge and 100 feet either side of it has been acquired by the District of Columbia. It would be further advisable to grade the abutting ground in accordance with the plans before actual construction of this bridge is commenced.

The Anacostia Bridge approaches have been completed; the bridge has been in use by the Anacostia and Potomac River Railroad Company since December 6, 1908, and has been open to the public since December 8, 1908. The available balance of the Anacostia Bridge appropriation is \$501.95 and the available balance of the Anacostia Bridge approach appropriation is \$2.96.

Funds for the removal of the old Anacostia Bridge became available July 1, and it is thought that the old structure will be demolished by December 1, 1909.

An appropriation of \$5,600 should be made for the year 1911 for the "Maintenance and operation of the Anacostia Bridge."

An appropriation of \$5,000 is asked for plans, specifications, estimates, and drawings for new bridges to replace bridge No. 30 (Calvert street crossing Rock Creek) and bridge No. 27 (Connecticut avenue extended across Klinge Ford road). These bridges were built in 1891 by the Rock Creek Railway Company, and were transferred to the District of Columbia July 20, 1891. It may be better to fill in the Klinge Ford valley on the line of Connecticut avenue, and it is suggested that this procedure be given consideration.

Your attention is particularly invited to bridge No. 30, which vibrates excessively, and while it is at present safe, it is thought that the vibration is causing material deterioration of the structure.

The elimination of the grade crossing on Cedar street at its intersection with the tracks of the Metropolitan branch of the Baltimore and Ohio Railroad is recommended at an estimated cost of \$50,000. This is a very important crossing and it is thought that this menace to the public should be eliminated at an early date.

All of the bridges under my supervision are in excellent condition, excepting bridge No. 1 (Chain Bridge across the Potomac River) and bridges No. 27 and No. 30. All of these bridges are sufficiently strong to carry the existing travel, but must be replaced within the next few years.

The fill upon the Connecticut Avenue Bridge has reached final settlement and it is desirable to complete the sidewalk paving upon the bridge. An appropriation of \$1,700 is suggested for this purpose.

An appropriation of \$20,000 is necessary for the construction and repair of bridges.

Very respectfully,

W. J. DOUGLAS,
Engineer of Bridges.

The ENGINEER OF HIGHWAYS.

SURFACE DIVISION.

Statement showing number of employees temporarily required in connection with street, road, and bridge construction and repairs, and appropriations and deposits from which paid, during the fiscal year ended June 30, 1909.

Designation.	Number.	Rate per diem.
Bridge keeper.....	1	\$2.50
Computer.....	1	4.50
	1	2.50
	1	2.80
Copyists.....	1	3.00
	3	3.25
	6	
	1	3.00
Draftsmen.....	1	5.00
	2	
Electrician.....	1	3.00
	1	3.00
	2	3.50
	1	3.25
Inspectors.....	16	4.00
	1	5.00
	1	7.00
	22	
	2	2.25
Overseers.....	2	3.00
	4	
Rodman.....	1	3.00
	1	3.00
Transit men.....	1	3.50
	1	4.00
	3	

Appropriations from which paid.

Improvements and repairs, 1909.....	\$16,301.37
Elimination of grade crossings, purchase, etc., of land, grading, etc.....	8,288.30
Approaches, etc., Anacostia Bridge, grading, improving, etc.....	1,673.00
Contingent and miscellaneous expenses, 1909.....	394.50
Maintenance Anacostia Bridge, 1909.....	2,574.50
Total.....	29,231.67

TABLE A.—Street railroads in operation in District of Columbia July 1, 1909.

Name of company.	Underground electric.		Overhead electric.	
	Double track.	Single track.	Double track.	Single track.
Washington Railway and Electric Co.:	<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>
Metropolitan.....	8.60	3.98	.....	.....
Columbia.....	2.77	.....	4.12	0.89
City and Suburban.....	3.86	2.36	5.58	.....
Brightwood.....	.....	.....	5.93	.....
Georgetown and Tenallytown.....	.....	.....	4.16	.....
Anacostia and Potomac River.....	7.65	.....	1.46	1.64
Total.....	22.88	6.34	21.25	2.53
Capital Traction.....	20.19	3.60	3.57	.....
Washington and Great Falls.....	.....	.....	3.88	.....
Washington, Alexandria and Mount Vernon.....	.30	.46	.....	.....
East Washington.....	.....	.....	.....	.50
Total.....	43.37	10.40	28.70	3.03
Tracks used in common by Capital Traction and Washington Railway and Electric companies.....	1.55	.....	.....	.....
Used in common by Washington Railway and Electric and Washington, Alexandria and Mount Vernon companies.....	.40	.....	.....	.....
Total.....	45.32	10.40	28.70	3.03

TABLES B AND C.—Statement showing character and extent of roadway pavements July 1, 1909.

Section.	Asphalt and coal tar.		Asphalt block.		Vitrified block.		Granite block.	
	Square yards.	Miles.	Square yards.	Miles.	Square yards.	Miles.	Square yards.	Miles.
Northwest.....	1,802,029	83.02	32,146	1.90	18,630	0.68	135,426	6.92
Northeast.....	293,811	14.94	208,228	9.11	.....	.....	22,959	1.28
Southeast.....	182,641	10.45	224,693	10.56	.....	.....	43,960	2.27
Southwest.....	213,236	11.35	50,379	2.54	3,005	.20	177,120	9.56
Georgetown.....	132,890	8.09	16,927	.76	780	.04	54,198	3.27
Suburban.....	319,940	17.66	62,769	3.45	.....	.....	31,713	1.70
Total.....	2,944,547	145.51	595,142	28.32	22,415	.92	465,376	25.00

Section.	Cobble.		Macadam.		Gravel and unimproved.		Total.	
	Square yards.	Miles.	Square yards.	Miles.	Square yards.	Miles.	Square yards.	Miles.
Northwest.....	63,588	2.66	43,722	2.67	58,571	3.10	2,154,112	100.95
Northeast.....	.....	.....	49,963	3.19	207,074	11.40	782,035	39.92
Southeast.....	12,641	.54	47,154	2.68	275,000	15.00	786,089	41.50
Southwest.....	67,061	2.78	28,741	1.40	127,158	7.64	666,700	35.47
Georgetown.....	13,010	.75	12,814	.83	24,301	1.42	254,920	15.16
Suburban.....	.....	.....	1,127,883	72.77	1,400,000	125.00	2,942,305	220.58
Total.....	156,300	6.73	1,310,277	83.54	2,092,104	163.56	7,586,161	453.58

TABLE E.—Statement of work on streets and avenues and county roads and suburban streets for year ending June 30, 1909.

STREETS AND AVENUES.

Street.	From—	To—	Section.	Kind of pavement and nature of work.	Contract work.												Material.			
					Square yards.	Length.	No. of contract.	Price per square yard.	Ordinary grading.	Macadam grading.	Old cobble and granite removed.	Old curb removed.	Curb set.	Curb reset.	Vitrified and cobble gutters.	Vitrified blocks.	8 by 8 curb.	6 by 20 curb.	Cir	
						<i>Feet.</i>			<i>Cubic yds.</i>	<i>Cubic yds.</i>	<i>Square yds.</i>	<i>Linear ft.</i>	<i>Linear ft.</i>	<i>Linear ft.</i>	<i>Square yds.</i>	<i>Number.</i>	<i>Linear ft.</i>	<i>Linear ft.</i>	<i>Linear ft.</i>	
B.	Fourteenth.	Fifteenth.	Northeast.	Asphalt block	2,378.55	582	4203	\$1.65	1,195.50	50.00	378.90	152.30	483.56	474.22						
B.	New Jersey avenue.	South Capitol.	Southeast.	Asphalt.	479.17	143	4155	1.48	75.00		455.23	63.00	3.00	185.58						
Canal.	South Capitol.	D.	Southwest.	do.	727.54	453	4155	1.48	292.75		102.44	6.70	438.79	30.68	114.44	5,613	386.15			
C.	Thirteenth.	Fourteenth.	Northwest.	do.	2,152.24	594	4155	1.48	423.45		2,138.36	833.20	845.55	52.90	276.48	13,140	749.36			
Delaware avenue.	do.	First.	Northeast.	do.	1,234.46	467	4155	1.48	93.13		2,235.22	882.12	880.24	38.52			802.05			
Delaware avenue.	B.	C.	do.	do.	2,299.81	540	4155	1.48	195.71		2,275.54	466.43	661.43	486.65			562.08			
Florida avenue.	Fifth.	Eighth.	do.	do.	4,195.48	1,519	3910	1.69		1,429.00	931.23	1,426.39	1,007.85	1,848.45	468.21	23,500		900.10		
Florida avenue.	Eighth.	Ninth.	do.	do.	1,899.25	384	4155	1.48			250.00	360.00	421.09	348.19	136.38	6,500		334.17		
K.	do.	Eleventh.	Southeast.	Asphalt block	2,615.41	783	4203	1.65	1,300.00	100.00	619.10	935.00	1,052.77	516.37			1,047.69			
New Jersey avenue.	L.	M.	do.	Asphalt.	1,274.96	326	4155	1.48			296.00			669.90		8,282				
do.	do.	L.	do.	do.	2,891.47	667	4155	1.48			690.00	1,150.00	1,154.27	163.76	301.05	14,750		1,144.33		
do.	do.	B.	do.	do.	3,726.58	722	4155	1.48			3,693.60	1,130.86	1,221.34	110.20			1,007.16			
Pennsylvania avenue.	Thirteenth.	C.	do.	do.	5,573.42	1,506	4155	1.48			1,225.00	53.00	458.96	1,411.81	469.10	22,000		353.00		
V.	Tenth.	Twelfth.	Northwest.	do.	1,441.45	472	4155	1.48			333.23	1,050.28	1,042.29	65.36	286.07	12,700	907.66			
V.	Fifteenth.	New Hampshire avenue.	do.	do.	616.88	201	4155	1.48			38.12	21.54	185.23	265.77	120.31	5,805	185.61			
Vermont avenue.	do.	U.	do.	do.	1,294.49	349	4155	1.48			289.27	389.85	396.43	324.19	165.43	8,106	386.95			
Fourth.	do.	Florida avenue.	Northeast.	do.	3,640.09	1,223	4155	1.48			452.93	471.00	112.54	112.54	615.01	30,100		2,116.79		
Seventh.	do.	K.	do.	do.	3,361.30	933	4155	1.48			285.00	619.40	1,714.63	236.48			1,670.18			
Tenth.	do.	G.	Southwest.	do.	4,123.93	1,208	4155	1.48			3,915.25	1,705.00	1,672.29	70.22			30,654			
Thirteen-and-a-half.	do.	D.	Northwest.	do.	716.27	286	4155	1.48			566.71		89.49	215.53	134.57					
Thirty-fourth.	do.	U.	Georgetown.	Asphalt block	2,089.84	652	4203	1.80		172.56	210.60				1,347.95					
Municipal building, approach to	do.	do.	Northwest.	Asphalt.	540.31	350	4155	1.48												
do.	do.	do.	do.	do.	26.63		4155	1.48		51.00				2.75	15.45	890				
Anacostia Bridge.	do.	do.	Southeast.	do.	1,562.20	900	4255	1.23												
Bridge over B. & O. R. R., Monroe street, Anacostia.	do.	do.	do.	do.	48.50	26	4255	1.23												
First.	B.	C.	do.	do.	1,774.71	588	4155	1.48	452.91		991.53	1,050.00	1,157.50	51.67	7.36					
Bridge over Monroe street, Anacostia, approaches.	do.	do.	do.	Granite.	1,910.60	1,100	4302						2,147.00							
Total.					54,295.54	17,034			8,000.00	5,056.24	20,961.75	12,270.67	17,418.88	10,240.76	3,991.54	187,262	7,765.33	5,340.11		

COUNTY ROADS AND SUBURBAN STREETS.

North Capitol.	T.	V.	Northeast and northwest.	Asphalt.	3,566.63	927	4155	\$1.48		594.44	938.19	26.50	98.12	1,863.74					70.51
Mills avenue.	Franklin.	Rhode Island avenue.	do.	Grading.			4161	.33	10,468.00										
Seventh.	Girard.	Central avenue.	do.	Macadam.	\$1,047.00	430													
Albemarle, east of Connecticut avenue.	do.	do.	Northwest.	Grading.			4196	.37	24,930.00										
Minnesota avenue.	Pennsylvania avenue.	Northward.	Southeast.	do.			4230	.27	7,589.00										
Massachusetts avenue.	S.	Southwest.	Asphalt block.	do.	3,530.25	619	4203	1.80	828.79	392.67	74.67		1,085.67						
Barnaby road.	District line.	Livingston road.	Southeast.	Graveling.															
Webster.	Northwest.	Macadam.	do.	do.	\$3,218.00	1,771	4165	.35	602.00										
Monroe.	Tenth.	do.	Northwest.	do.	\$3,931.00	1,327	4165	.35	750.00										
Reno road.	do.	do.	do.	Grade and improve.	\$2,400.00	1,400													
Longfellow.	Fifth.	Shepherd road.	do.	do.	1,091.00	300													
Sixteenth.	Arkansas avenue.	Webster.	do.	do.			4165	.35	1,436.00										
do.	Webster.	Kennedy.	do.	do.			4350	.27	16,397.00										
Randolph place.	North Capitol.	Lincoln road.	Northwest.	Asphalt block.	417.32	124	4203	1.80	41.39	54.36									
Girard.	do.	Thirteenth.	do.	do.	2,394.81	716	4203	1.80	154.93	333.00	91.16	221.00		33.83				220.06	
Holmead place.	do.	Otis.	do.	Grade and improve.	\$3,230.00	1,300	4165	.35	708.00										25.83
Fifth.	do.	do.	do.	do.	\$2,457.00	889	4165	.35	742.00										
Forty-first and Western avenue.	U.	W.	do.	do.	\$4,872.00	2,000	4196	.27	11,539.00										
S.	North Capitol.	Lincoln road.	Northeast.	Asphalt block.	659.63	185	4203	1.80	62.04	94.61	100.70	175.00		229.42	59.99			175.95	
Manor place, Warrier street, and Lury place.	do.	do.	Northwest.	Grade and improve.	\$3,702.00	1,500	4163	.35	558.00					2,756.73	15.23	1,382.10			2,677.82
Rittenhouse and Western avenue.	do.	do.	do.	do.	\$5,194.00	2,100	4196	.27	2,066.00										
Streets in Anacostia.	do.	do.	Southeast.	do.			4165	.35	576.00										
Ingraham.	Georgia avenue.	Ninth.	Northwest.	do.	\$1,531.00	592	4165	.35	274.00										
Ontario place.	do.	do.	do.	do.	\$2,600.00	800	4165	.35	308.00										
Ingleside Terrace.	do.	do.	do.	do.	\$3,685.00	1,400	4165	.35	1,470.00										
Kearney.	Twelfth.	Thirteenth.	Northeast.	Grading.			4163	.37	4,401.00										
Emerson.	Georgia avenue.	Fourteenth.	Northwest.	Macadam.	\$3,819.00	1,700													
Mills avenue.	Franklin.	Rhode Island avenue.	Northeast.	Culvert.			4244												
Minnesota avenue.	Carpenter place.	Twenty-eighth.	Southeast.	do.			4244												
Total.					52,695.64	19,780			85,961.15	1,475.08	2,497.82	1,127.35	16,175.93	3,663.32	12,015.90		3,541.22	7,011.05	

a Appropriation, 1908.

b Municipal building.

c Sidewalks and curbs.

d Total, 42,127 square yards macadam, stone for which was from District quarry, spread and

TABLE E.—Statement of work on streets and avenues and county roads and suburban streets for year ending June 30, 1909.

STREETS AND AVENUES.

Section.	Kind of pavement and nature of work.	Contract work.											Material.				Cost of material.	Cost of extra work and day labor.	Amount of contract.	Total cost of work.	Contractor.		
		Square yards.	Length.	No. of contract.	Price per square yard.	Ordinary grading.	Macadam grading.	Old cobble and granite removed.	Old curb removed.	Curb set.	Curb reset.	Vitrified and cobble gutters.	Vitrified blocks.	8 by 8 curb.	6 by 20 curb.	Circular curb.							
			<i>Feet.</i>			<i>Cubic yds.</i>	<i>Cubic yds.</i>	<i>Square yds.</i>	<i>Linear ft.</i>	<i>Linear ft.</i>	<i>Linear ft.</i>	<i>Square yds.</i>	<i>Number.</i>	<i>Linear ft.</i>	<i>Linear ft.</i>	<i>Linear ft.</i>							
Northeast.	Asphalt block.	2,378.55	582	4203	\$1.65	1,195.50	50.00	378.90	152.30	483.56	474.22						\$480.93		\$4,791.37	\$5,272.30	Washington Asphalt Block and Tile Co.		
Southeast.	Asphalt.	479.17	143	4155	1.48	75.00		455.23	63.00	3.00	185.58							1,136.43	1,136.43	Cranford Paving Co.			
Southwest.	do.	727.54	453	4155	1.48	292.75		102.44	6.70	438.79	30.68		5,613	386.15			425.67	1,654.42	2,080.09	Do.			
Northeast.	do.	2,132.24	594	4155	1.48	423.45		2,158.36	833.20	845.55	52.90		13,140	749.36		54.24	928.12	4,807.82	6,187.87	Do.			
do.	do.	1,234.46	467	4155	1.48	93.13		1,235.22	880.24	880.24	38.52			802.05		80.18	723.42	2,642.37	3,365.79	Do.			
do.	do.	2,299.81	540	4155	1.48	195.71		2,275.54	466.43	661.43	485.05			502.08		110.13	561.99	4,661.56	5,223.55	Do.			
do.	do.	4,195.48	1,519	3910	1.69		1,429.00	931.23	1,426.39	1,007.85	1,848.45	468.21	23,500		900.10	112.54	1,483.08	9,002.64	11,091.72	Do.			
do.	do.	1,899.25	384	4155	1.48		324.00	250.00	360.00	421.09	348.19	136.38	6,500		394.17	22.99		3,483.87	4,023.19	Do.			
Southeast.	Asphalt block.	2,615.41	783	4203	1.65	1,300.00	100.00	619.10	935.00	1,052.77	516.37			1,047.69		6.28	844.56	5,861.61	6,757.02	Washington Asphalt Block and Tile Co.			
do.	Asphalt.	1,274.96	326	4155	1.48		237.00	296.00		669.90	175.36		8,282				172.27	2,445.43	2,617.70	Cranford Paving Co.			
do.	do.	2,891.47	607	4155	1.48		421.00	600.00	1,150.00	1,154.27	163.76		14,750		1,144.33	9.42	1,406.06	5,656.25	7,062.31	Do.			
do.	do.	3,726.58	722	4155	1.48		583.00	3,693.60	1,130.86	1,224.34	110.20			1,007.16			124.32	7,854.08	8,787.22	Do.			
do.	do.	5,273.42	1,506	4155	1.48		515.00	573.00	1,225.00	53.00	458.96	1,411.81	469.10	22,000			116.11	942.73	10,807.83	Do.			
Northeast.	do.	1,441.45	472	4155	1.48		213.45	240.24	333.23	1,050.28	1,042.29	65.36	286.07	12,700			43.96	907.66	3,611.26	4,646.39	Do.		
do.	do.	616.88	201	4155	1.48		137.91	116.00	38.12	21.54	185.23	265.77	120.31	5,895			185.61	1,509.18	1,780.29	Do.			
do.	do.	1,294.49	349	4155	1.48		225.00	289.27	389.85	396.43	324.19	165.43	8,106			8.66	486.99	3,122.17	3,967.93	Do.			
Northeast.	do.	3,640.09	1,223	4155	1.48		452.93	471.00	322.00	645.00	2,154.46	615.01	30,100		2,116.79	37.68	2,685.64	7,314.75	10,000.39	Do.			
do.	do.	3,361.30	933	4155	1.48			619.40	285.00	1,714.63	236.48			1,670.18		40.34	1,377.23	6,323.39	9,700.68	Do.			
Southwest.	do.	4,123.93	1,268	4155	1.48		889.45	3,915.25		80.49	1,672.29		30,054				80.49	740.56	9,271.92	10,012.48	Do.		
do.	do.	716.27	286	4155	1.48		137.02	566.71		215.53	134.57		5,822					121.10	2,007.33	2,128.43	Do.		
Georgetown.	Asphalt block.	2,089.84	652	4203	1.80		172.56	210.60		1,347.95								4,484.35	4,649.49	Washington Asphalt Block and Tile Co.			
Northeast.	Asphalt.	540.31	350	4155	1.48													799.66	799.66	Cranford Paving Co.			
do.	do.	26.63		4155	1.48		51.00											174.85	191.49	Do.			
Southwest.	do.	1,562.20	900	4255	1.23													82.04	1,921.51	2,003.55	Brennan Construction Co.		
do.	do.	48.50	26	4255	1.23													59.65	59.65	Do.			
do.	do.	1,774.71	588	4155	1.48	452.91		991.53	1,050.00	1,157.50	51.67	7.36						3,937.63	3,937.63	Cranford Paving Co.			
do.	Granite.	1,910.60	1,100	4302						2,147.00								1,362.89	1,362.89	Do.			
		54,295.54	17,034					8,000.00	5,056.24	20,961.75	12,270.67	17,418.88	10,240.76	3,991.54	187,262	7,765.33	5,340.11	911.23	16,181.15	1,152.30	110,340.26	127,653.97	

COUNTY ROADS AND SUBURBAN STREETS.

Northeast and northwest.	Asphalt.....	3,566.63	927	4155	\$1.48		594.44	938.19	26.50	98.12	1,863.74				70.51	32.97	\$103.51	\$171.82	\$6,588.74	\$6,870.07	Cranford Paving Co.		
Northeast.	Grading.....			4161	.33	10,468.00												321.41	767.51	3,454.44	Jas. M. Duncan.		
do.	Macadam.....	\$1,047.00	430															371.71	498.47	870.18	Day labor.		
Southwest.	Grading.....			4196	.37	24,930.00												106.46	428.65	9,394.05	9,989.16	Geo. B. Mullin.	
Southeast.	do.....			4230	.27	7,589.00												154.18	86.88	2,083.97	2,328.03	W. F. Brenizer.	
Northwest.	Asphalt block.....	3,530.25	619	4203	1.80	828.79	392.67	74.67		1,085.67						25.38	112.46	57.00	7,230.02	7,399.48	Washington Asphalt Block and Tile Co.		
Southeast.	Graveling.....																	129.26	770.28	899.54	Day labor.		
Northwest.	Macadam.....	\$3,218.00	1,771	4165	.35	602.00						979.00					2,482.09	755.24	3,957.10	3,957.10	E. G. Gummel.		
Northeast.	do.....	\$3,931.00	1,827	4165	.35	750.00		89.00	93.60	2,838.70		1,288.50			2,681.19	116.18		3,668.65	3,850.78	1,500.09	9,109.52	Do.	
Northwest.	Grade and improve.....	\$2,400.00	1,400															1,013.86	1,982.33	2,996.19	2,996.19	Do.	
do.	do.....	1,091.00	300															640.23	359.64	999.87	999.87	Day labor.	
do.	do.....			4165	.35	1,436.00						1,700.00							79.79	1,046.60	1,999.92	(E. G. Gummel.	
do.	do.....			4350	.27	16,397.00													13,145.61	1,218.75	4,509.17	4,509.17	Geo. B. Mullin.
Northeast.	Asphalt block.....	417.32	124	4203	1.80	41.39	54.36	91.16	221.00	264.50	53.83							178.53	973.29	1,151.82	1,151.82	Washington Asphalt Block and Tile Co.	
Northwest.	do.....	2,394.81	716	4203	1.80	154.93	339.00	594.00	131.99	1,414.12					25.83	14.60		77.65	74.06	5,081.37	5,233.08	Do.	
do.	Grade and improve.....	\$3,230.00	1,300	4165	.35	708.00		204.50		2,229.79	41.32	1,241.00		2,053.98		109.90	1,855.70	450.26	3,844.85	3,844.85	E. G. Gummel.		
do.	do.....	\$2,457.00	889	4165	.35	742.00		67.60	229.60	1,664.04	22.70	845.70			1,554.70	98.04		1,026.42	1,240.52	2,350.42	2,350.42	Do.	
do.	do.....	\$4,872.00	2,000	4196	.27	11,539.00												3,878.25	1,006.15	3,115.33	7,999.93	Geo. B. Mullin.	
Northeast.	Asphalt block.....	659.63	185	4203	1.80	62.04		94.61	100.70	175.00	229.42	59.99				9.42		150.37	5.90	1,456.49	1,712.76	Washington Asphalt Block and Tile Co.	
Northwest.	Grade and improve.....	\$3,702.00	1,500	4165	.35	538.00					2,756.73	15.23	1,832.10					2,604.13	789.85	1,606.02	5,000.00	E. G. Gummel.	
do.	do.....																						
Southwest.	do.....	\$5,194.00	2,100	4196	.27	2,066.00												3,656.94	3,217.68	581.17	7,455.79	Geo. B. Mullin.	
Northwest.	do.....			4165	.35	576.00		6.00	27.65	3,611.28	84.39	2,349.60						1.95	1,626.58	2,371.47	4,000.00	E. G. Gummel.	
do.	do.....	\$1,531.00	592	4165	.35	274.00		117.00				583.00						761.36	304.50	351.81	1,417.67	Do.	
do.	do.....	\$2,600.00	800	4165	.35	308.00		15.00				536.10						1,793.86	322.06	383.89	2,499.81	Do.	
do.	do.....	\$3,035.00	1,100	4165	.35	1,470.00		290.00	354.00	1,265.69		1,110.30						906.13	4.31	1,738.06	2,708.50	Do.	
Northeast.	Grading.....			4163	.37	4,401.00									1,090.63		32.99		170.74	1,628.37	1,799.11	Stutler & Ready.	
Northwest.	Macadam.....	\$3,819.00	1,700															2,438.10	1,441.57	3,879.67	3,879.67	Day labor.	
Northeast.	Culvert.....			4244														228.60	61.85	676.75	957.20	E. G. Gummel.	
Southwest.	do.....			4244														185.40	19.88	465.95	671.23	Do.	
		52,695.64	19,780			85,961.15	1,475.08	2,497.82	1,127.35	16,175.93	3,663.32	12,015.90		3,541.22	7,011.05	487.58	42,028.82	20,596.01	59,849.43	122,574.26			

Municipal building.

Sidewalks and curbs.

Total, 42,127 square yards macadam, stone for which was from District quarry, spread and rolled by day labor. New curb work assessed and repaid appropriation.

TABLE E.—Elimination of grade crossings.

Street.	Section.	From—	To—	Kind of pavement.	Contract work.										Material.				
					Square yards.	Length.	No. of contract.	Price per square yard.	Ordinary grading.	Macadam grading.	Old cobble and granite removed.	Old curb removed.	Curb set.	Curb reset.	Vitrified block gutters.	Number vitrified block.	8 by 8 curb.	6 by 20 curb.	Circular curb.
First	Northeast	H	New York avenue	Granite	12,561.71	<i>Feet.</i> 3,067	4,111	\$1.19	<i>Cubic yds.</i> 3,545.03	<i>Cubic yds.</i> 1,002.66	<i>Square yds.</i> 427.00	<i>Linear feet.</i> 634.00	<i>Linear feet.</i> 6,130.76	<i>Linear ft.</i> 76.80	<i>Square yds.</i> 303.55		<i>Linear feet.</i> 22.12	<i>Linear feet.</i> 4,719.76	<i>Linear feet.</i> 218.2
Do	do	H	do	do	^a 364.24				108.82	122.21	664.00								
Sixth	Northwest and southwest	B north	D south	Asphalt	1,050.81		3,910	1.69	851.00			3,826.00	4,301.45	392.62	303.55	13,822	4,033.48		277.8
Do	do	do	do	do	^b 9,248.47	2,556	3,910	1.69	1,801.00		8,972.00		286.52	44.60	1,059.90	48,200	386.00		
D	Southwest	Tenth	Eleventh	do	819.55	250	4,155	1.48	315.00		66.00		451.21	60.68	126.92	6,254		200.26	9.4
Maryland avenue	do	Eleventh	Twelfth	do	794.59	275	4,155	1.48	300.00			300.00	485.30	3.85	130.04	6,380		222.12	14.1
Virginia avenue	do	Second	Four-and-a-half	do	2,268.82	626	4,155	1.48	1,069.00	142.00					304.79	19,400			
Do	do	First	Second	do	983.54	340	4,155	1.48	222.10	222.20					173.65	8,500			
Do	Southeast	South Capitol	New Jersey avenue	do	3,127.01	950	4,155	1.48	1,762.00		42.00	32.00	1,915.50	70.01	506.98	23,966		1,200.05	73.4
New Jersey avenue	Northwest	H	Second	do	^b 850.96	500	4,155	1.48	340.78			144.00	555.09						21.4
Total					^c 32,069.70	8,564			10,314.73	1,489.07	10,171.00	4,936.00	14,125.83	648.56	2,605.83	126,522	4,441.60	6,342.19	615.0

^a Repairs to streets.^b Miscellaneous trust fund railroad deposit. New curb work assessed and repaid appropriation.^c Granite, 12,925.95 square yard.

TABLE E.—Elimination of grade crossings.

To—	Kind of pavement.	Contract work.											Material.				Cost of material.	Cost of extra work and day labor.	Amount of contract.	Cost of street.	Contractor.
		Square yards.	Length.	No. of contract.	Price per square yard.	Ordinary grading.	Macadam grading.	Old cobble and granite removed.	Old curb removed.	Curb set.	Curb reset.	Vitrified block gutters.	Number vitrified block.	8 by 8 curb.	6 by 20 curb.	Circular curb.					
New York avenue.....	Granite.....	12,561.71	<i>Feet.</i> 3,067	4,111	\$1.19	<i>Cubic yds.</i> 3,545.03	<i>Cubic yds.</i> 1,002.66	<i>Square yds.</i> 108.82	<i>Linear feet.</i> 634.00	<i>Linear feet.</i> 6,130.76	<i>Linear ft.</i> 76.80	<i>Square yds.</i> .....	.....	<i>Linear feet.</i> 22.12	<i>Linear feet.</i> 4,719.76	<i>Linear feet.</i> 218.23	\$4,782.99	\$47.08	\$19,594.61	\$24,509.95	Brennan Construction Co.
do.....	do.....	a 364.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53.04	32.23	.....	.....	Do.
D south.....	Asphalt.....	1,050.81	.....	3,910	1.69	851.00	.....	427.00	.....	4,301.45	392.62	303.55	13,822	4,033.48	.....	277.83	3,797.67	.....	4,716.75	8,514.42	Cranford Paving Co.
do.....	do.....	b 9,248.47	2,556	3,910	1.69	1,801.00	.....	8,972.00	.....	286.52	44.60	1,059.90	48,200	386.00	.....	.....	1,231.36	34.50	19,447.06	20,712.92	Do.
Eleventh.....	do.....	819.55	250	4,155	1.48	315.00	.....	66.00	.....	451.21	60.68	126.92	6,254	.....	200.26	9.42	332.48	.....	1,836.93	2,169.41	Do.
Twelfth.....	do.....	794.59	275	4,155	1.48	300.00	.....	.....	300.00	485.30	3.85	130.04	6,380	.....	222.12	14.13	361.94	43.47	1,757.34	2,162.75	Do.
Four-and-a-half.....	do.....	2,268.82	626	4,155	1.48	1,069.00	.....	142.00	.....	.....	.....	304.79	19,400	.....	.....	.....	403.52	.....	4,592.80	4,996.32	Do.
Second.....	do.....	983.54	340	4,155	1.48	222.10	.....	222.20	.....	.....	.....	173.65	8,509	.....	.....	.....	176.80	181.88	1,925.98	2,284.66	Do.
New Jersey avenue.....	do.....	3,127.01	950	4,155	1.48	1,762.00	.....	42.00	32.00	1,915.50	70.01	506.98	23,966	.....	1,200.05	73.44	1,733.28	19.84	6,531.57	8,284.69	Do.
Second.....	do.....	b 850.96	500	4,155	1.48	340.78	.....	.....	144.00	555.09	.....	.....	.....	.....	.....	21.98	28.35	.....	1,882.45	1,910.80	Do.
.....	.....	c 32,069.70	8,564	.....	.....	10,314.73	1,480.07	10,171.00	4,936.00	14,125.83	648.56	2,605.83	126,522	4,441.60	6,342.19	615.03	12,901.43	359.00	62,285.49	75,545.92	.....

b Miscellaneous trust fund railroad deposit. New curb work assessed and repaid appropriation.

c Granite, 12,925.95 square yards; asphalt, 19,143.75 square yards.

TABLE F.—Repairs to asphalt pavements under contract with Brennan Construction Company (No. 3927) for the year ending June 30, 1909.

Street.	From—	To—	Repairs to asphalt.						New gutters.					Curb work.					Total cost of street.	Re		
			New pavement.	Resurfacing.	Base.	Binder.	Old pavement removed.	Grading.	Total cost of repairs.	Vitrified block gutters.	Grading and removal of material.	Number of blocks.	Cost of blocks.	Total cost of gutters.	Old curb removed.	Curb set.	Curb reset.	Cost of curb.			Total cost of curb work.	
			Square yds.	Square yds.	Cubic yds.	Cubic feet.	Cubic yds.	Cubic yds.		Square yds.					Linear feet.	Linear feet.	Linear feet.					
B se.	Second.	Fifth.	a 291.82	2,820.50	12.80	6,224.95	81.00	177.00	\$4,139.79	479.08		21,685	\$451.05	\$1,062.87	36.06	871.05	245.70	\$853.61	\$11.18	\$5,213.84	Jul	
C sw.	Tenth.	Twelfth.	1,611.10	.58			1,907.00	160.00	3,054.09	268.11		13,000	270.40	618.94	571.05	871.05	245.70	\$853.61	4,230.13	4,903.16	Oct	
Connecticut avenue.	R.	S.	1,579.59	45.78		63.60		35.00	3,291.82	281.61		13,450	279.76	645.85	12.00	6.35	524.24	288.93	173.66	4,111.33	Oct	
Do (south side).	Third.	Fifteenth.	6,761.38	2,397.48	28.76		1,539.00	325.00	16,225.66	1,299.20	1,161.00	56,904	1,183.60	3,098.13	50.00	126.33	3,033.25	84.71	877.23	20,201.02	Sept	
Massachusetts avenue.	Twenty-first.	Twenty-second.	3,488.67	119.47		186.00		50.00	6,872.02	334.48		15,041	312.85	748.44	343.26	329.62	25.00	285.02	542.90	8,163.36	Sept	
Do.	Second ne.	Plaza.	b 1,166.90					669.00	2,263.58	206.30		9,900	205.92	474.11		1,013.70	39.61	821.37	1,220.39	3,958.06	No	
New Hampshire avenue.	R.	T.	7,963.99	231.66	1.00		387.00	1,873.00	300.00	16,471.66	786.41		35,000	728.00	1,761.61	97.00	100.89	2,793.98	101.06	1,115.08	19,348.25	Aug
New Jersey avenue.	N.	O.	1,869.14	122.83			124.00	426.00	50.00	3,957.28	276.21		12,674	263.62	622.69	1,081.00	1,080.96	35.71	898.61	1,387.13	5,967.10	Aug
Do.	P.	Florida avenue.	5,568.64	791.15	18.00		361.78	1,337.00	150.00	11,535.21	1,018.83		48,270	1,004.02	2,323.78	3,549.00	3,554.45	332.81	2,951.00	4,707.19	18,566.18	Aug
Intersection Massachusetts avenue, New Jersey avenue, and G.			c 2,413.64	948.16	10.27		2,220.00	224.00	800.00	5,847.48	313.34		14,800	307.84	715.18	724.00	983.00	152.67	824.73	1,314.47	7,877.13	Apr
New York avenue.	Eleventh.	Thirteenth.	5,714.79	590.30	6.50		1,210.00	1,772.00	212.00	12,812.80	439.25		21,598	447.37	1,027.41	1,687.00	295.04	496.63	208.92	586.15	14,426.36	Oct
Pennsylvania avenue se.	Second.	Eighth.	5,432.61	5,195.50	130.86		10,186.06	1,233.67	475.00	17,064.06	607.73	20.00	27,803	378.30	1,371.35	206.00	216.23	1,874.25	117.60	724.66	19,160.07	Jul
Do.	Eighth.	Eleventh.	613.18	3,483.91	19.60		6,324.90	191.00	50.00	5,322.63	249.02		11,626	241.82	565.55		74.70	1,805.78	101.39	503.54	6,391.72	Sept
Q nw.	Twenty-first.	Twenty-second.	1,384.71	20.94			50.00	400.00	337.00	2,546.69	217.61		10,610	220.69	503.58	405.93	593.40	146.97	317.52	534.72	3,894.99	Sept
R nw.	Ninth.	Fifteenth.		2,662.12	276.77		3,477.48	100.00	16.00	4,336.94	422.79		20,625	429.00	977.88		267.19	47.52	217.08	333.43	5,608.25	Oct
S nw.	New Hampshire avenue.	Fifteenth.	3,613.72	298.98	1.00		556.00	935.50	50.00	7,226.52	624.27		29,000	603.20	1,414.21	984.34	966.96	906.40	792.03	1,589.53	10,230.26	Sept
First ne.	C north.	B south.	e 9,731.98	2,320.13	305.68		5,832.32	69.00	337.00	27,424.26	953.92	370.00	30,020	624.42	2,043.39	137.00	345.92	3,331.55	373.17	1,456.26	30,923.91	Sept
Fifth nw.	Q.	Rhode Island avenue.	2,371.00	343.94	12.00		532.80	570.00	32.00	4,856.99	476.98	20.00	21,750	452.40	1,074.71	496.63	502.63	116.45	415.94	701.77	6,633.47	Oct
Eighth nw.	N.	P.		2,544.37	152.70		4,721.00	70.00	30.00	3,822.76	400.16		19,280	401.19	921.40	40.00	39.80	237.35	35.35	164.41	4,908.57	Oct
Fourteenth nw.	D.	Pennsylvania avenue.	781.09	1,619.86	189.80		2,156.09	336.00	100.00	4,651.55	185.26		8,760	182.21	423.05	294.00	294.28	43.42	246.33	413.96	5,488.56	Dec
Fourteenth nw (east side).	Euclid.	Kenyon.		3,455.94			5,187.74	83.00	25.00	3,959.83	456.92		21,450	446.16	1,040.16	25.00	25.15	439.00	25.59	172.15	5,172.14	No
Seventeenth nw.	S.	New Hampshire avenue.	620.56					157.00	15.00	1,244.08	104.21		4,700	97.76	233.23			303.65		85.46	1,562.77	Aug
Eighteenth nw.	Florida avenue.	Columbia road.	7,631.47	331.07	11.11		894.00	1,200.00	438.00	15,313.69	53.03		2,500	52.00	263.49	121.00	318.26	2,983.72	364.38	1,782.92	17,360.10	Jun
Twenty-first nw.	Massachusetts avenue.	Q.	217.07					64.00	50.00	485.20	36.12		1,761	36.63	83.59	167.97	195.77	137.79	215.22	784.01	784.01	Sept
Do.	Q.	Hillyer place.	685.54					805.00		1,489.32	126.75		6,088	126.63	291.56	129.96	129.96	214.16	112.02	247.45	2,028.33	Sept
Total.			71,462.59	30,344.64	1,176.85	50,095.72	13,050.67	4,903.00	186,215.82	10,475.39	1,577.00	435,185	8,852.02	24,306.16	11,422.14	12,311.60	19,851.22	10,871.15	22,110.99	232,632.97		

a Paid from 1908 appropriation. New curb work assessed and repaid appropriation.

b Elimination of grade crossings.

c Miscellaneous trust fund.

Repair by Lutz Heater System.

Street.	From—	To—	Square yards.	Cubic feet.	Cost per unit.	Total cost.
Pennsylvania avenue (south side).	Executive avenue.	Fifteenth.	2,528.00	2,311.88	70	\$1,617.96
M nw.	Thirty-first.	Thirty-second.	1,000.00	910.00	70	637.00
Nineteenth nw.	G.	H.	1,790.00	1,734.60	70	1,214.22
East Executive avenue.			3,419.00	2,998.80	70	2,099.16
Eighteenth nw.	K.	L (on asphalt block).	1,463.00	1,484.70	70	1,039.29
K nw.	Seventeenth.	Connecticut avenue.	1,475.50	1,264.20		884.94
Total.			11,675.50	10,703.68		7,492.57

Minor repairs.

88,357.64 cubic feet asphalt surface, at 44 cents.	\$38,877.36
58,233.34 cubic feet binder, at 25 cents.	14,573.33
2.57 cubic yards bituminous base, at \$3.	7.71
Total.	53,458.40

TABLE F.—Repairs to asphalt pavements under contract with Brennan Construction Company (No. 3927) for the year ending June 30, 1909.

To—	Repairs to asphalt.							New gutters.					Curb work.					Total cost of street.	Repairs completed.	Original pavement.		
	New pavement.	Resurfacing.	Base.	Binder.	Old pavement removed.	Grading.	Total cost of repairs.	Vitrified block gutters.	Grading and removal of material.	Number of blocks.	Cost of blocks.	Total cost of gutters.	Old curb removed.	Curb set.		Cost of curb.	Total cost of curb work.			Character of pavement.	Year laid.	Contractor.
	<i>Square yds.</i>	<i>Square yds.</i>	<i>Cubic yds.</i>	<i>Cubic feet.</i>	<i>Cubic yds.</i>	<i>Cubic yds.</i>			<i>Square yds.</i>				<i>Linear feet.</i>	<i>Linear feet.</i>	<i>Linear feet.</i>							
Fifth.....	a 291.82	2,820.50	12.80	6,224.95	81.00		\$4,139.79	479.08		21,685	\$451.05	\$1,062.87					\$11.18	\$5,213.84	July 11, 1908	Asphalt.....	1881	H. L. Cranford.
Twelfth.....	1,611.10	58			1,907.00	102.00	3,054.09	268.11		13,000	270.40	618.94						4,903.16	Oct. 30, 1908	Asphalt block.....	1885	P. Maloney.
Eight.....	1,579.59	45.78		63.60		35.00	3,291.82	281.61		13,450	279.76	645.85						4,111.33	Oct. 26, 1908	Coal tar.....	1873	C. E. Evans.
Fifteenth.....	6,761.38	2,397.48	28.76		1,539.00	325.00	16,225.66	1,299.20	1,161.00	56,904	1,183.60	3,098.13	50.00	126.33	3,033.25	84.71	877.23	20,201.02	Sept. 8, 1908	Asphalt.....	1890	Barber Asphalt Paving Co.
Twenty-second.....	3,488.67	119.47		186.00	390.00	50.00	6,872.02	334.48		15,041	312.85	748.44	343.26	329.62	25.00	285.02	542.90	8,163.36	Sept. 26, 1908	Coal-tar vulcanite.....	1875	Cranford & Hoffman.
Plaza.....	b 1,166.90					609.00	2,263.58	206.30		9,900	205.92	474.11		1,013.70	39.61	821.37	1,220.39	3,958.06	Nov. 11, 1908	Old pavement displaced by elimination of grade crossing.		
T.....	7,963.99	231.66	1.00	387.00	1,873.00	300.00	16,471.66	786.41		35,000	728.00	1,761.61	97.00	100.89	2,793.98	101.06	1,115.08	19,348.25	Aug. 5, 1908	Asphalt.....	1889	Cranford Paving Co.
O.....	1,869.14	122.83		124.00	426.00	50.00	3,957.28	276.21		12,674	263.62	622.69	1,081.00	1,080.96	35.71	898.61	1,337.13	5,967.10	Feb. 5, 1909	Coal tar.....	1887	Do.
Florida avenue.....	5,568.64	791.15	18.00	361.78	1,337.00	150.00	11,535.21	1,018.83		48,270	1,004.02	2,323.78	3,549.00	3,554.45	332.81	2,951.00	4,707.19	18,566.18	.....do.....	.....do.....	1887	Do.
	c 2,413.64	948.16	10.27	2,220.00	224.00	800.00	5,847.48	313.34		14,800	307.84	715.18	724.00	983.00	152.67	824.73	1,314.47	7,877.13	Apr. 28, 1909	Old pavement displaced by elimination of grade crossing.		
Thirteenth.....	5,714.79	590.30	6.50	1,210.00	1,772.00	212.00	12,812.80	439.25		21,508	447.37	1,027.41	1,687.00	295.04	496.63	208.92	586.15	14,426.36	Oct. 24, 1908	Coal tar.....	1872	L. S. Filbert.
Eight.....	5,432.61	5,195.50	130.86	10,186.06	1,233.67	475.00	17,064.06	607.73	50.00	27,803	378.30	1,371.35	206.00	216.23	117.60	724.66	19,160.07	July 30, 1908	.....do.....	1876	Jonas Taylor.	
Eleventh.....	613.18	3,483.91	19.60	6,324.90	191.00	50.00	5,322.63	249.02		11,626	241.82	365.55		74.70	1,805.78	101.39	503.54	6,391.72	Sept. 25, 1908	Asphalt.....	1883	Barber Asphalt Paving Co.
Twenty-second.....	1,384.71	20.94		50.00	400.00	337.00	2,546.69	217.61		10,610	220.69	503.58	405.93	593.40	146.97	317.52	3,584.99	Sept. 26, 1908	Coal tar.....	1875	Cranford & Hoffman.	
Fifteenth.....	2,662.12	276.77	3,477.48	100.00	16.00	4,336.94	422.79	977.88		20,625	429.00	977.88		267.19	47.52	217.08	353.43	5,068.25	Oct. 14, 1908	Asphalt.....	1884	Barber Asphalt Paving Co.
	3,513.72	298.98	1.00	556.00	935.50	50.00	7,226.52	624.27		29,000	603.20	1,414.21	984.34	966.96	906.40	792.03	1,589.53	10,230.26	Sept. 21, 1908	.....do.....	1889	Cranford Paving Co.
B south.....	e 9,731.98	2,320.13	305.68	5,832.32	69.00	337.00	27,424.26	953.92	370.00	30,020	624.42	2,043.39	137.00	345.92	3,331.55	373.17	1,456.26	30,923.91	Sept. 15, 1909	(Coal tar.....)	1873	J. O. Evans.
Rhode Island avenue.....	2,371.00	343.94	12.00	532.80	570.00	32.00	4,856.99	476.98	25.00	21,750	452.40	1,074.71	496.63	502.63	116.45	415.94	701.77	6,633.47	Oct. 5, 1908	(Resurfaced.)	1897	Cranford Paving Co.
P.....	2,544.37	152.70		4,721.00	70.00	30.00	3,822.76	400.16		19,280	401.19	921.40	40.00	39.80	237.35	35.35	164.41	4,908.57	Sept. 5, 1908	Asphalt, bituminous base.....	1889	Do.
Pennsylvania avenue.....	781.09	1,619.86	189.80	2,156.09	336.00	100.00	4,651.55	185.26		8,760	182.21	423.05	294.00	294.28	43.42	246.33	413.96	5,488.56	Dec. 16, 1908	Asphalt.....	1883	Barber Asphalt Paving Co.
Kenyon.....		3,455.94		5,187.74	83.00	25.00	3,959.83	456.92		21,450	446.16	1,040.16	25.00	25.15	439.00	25.59	172.15	5,172.14	Nov. 9, 1908	Coal tar.....	1887	Cranford Paving Co.
New Hampshire avenue.....	620.56				157.00	15.00	1,244.08	104.21		4,700	97.76	233.23			303.65		85.46	1,562.77	Aug. 21, 1908	Asphalt, bituminous base.....	1892	Barber Asphalt Paving Co.
Columbia road.....	7,631.47	331.07	11.11	894.00	1,200.00	438.00	15,313.69	53.03		2,500	52.00	263.49	121.00	318.26	2,983.72	364.38	1,782.92	17,360.10	June 7, 1909	Asphalt, bituminous base; asphalt, hydraulic base.....	1889	Cranford Paving Co.
Q.....	217.07				64.00	50.00	485.20	36.12		1,761	36.63	83.59	167.97	195.77		137.79	215.22	784.01	Sept. 26, 1908	Coal tar.....	1894	Do.
Hillyer place.....	685.54				805.00		1,489.32	126.75		6,088	126.63	291.56	129.96	129.96	214.16	112.02	247.45	2,028.33	.....do.....	.....do.....	1875	C. E. Evans.
	71,462.59	30,344.64	1,176.85	50,695.72	13,050.67	4,903.00	186,215.82	10,475.39	1,577.00	435,185	8,852.02	24,306.16	11,422.14	12,311.60	19,851.22	10,871.15	22,110.99	232,632.97		Asphalt block.....	1884	Superintendent streets.

from 1908 appropriation. New curb work assessed and repaid appropriation.

b Elimination of grade crossings.

c Miscellaneous trust fund railroad deposit.

Repair by Lutz Heater System.

Street.	From—	To—	Square yards.	Cubic feet.	Cost per unit.	Total cost.
Pennsylvania avenue (south side).....	Executive avenue.....	Fifteenth.....			<i>Cents.</i>	
M nw.....	Thirty-first.....	Thirty-second.....	2,528.00	2,311.38	70	\$1,617.96
Nineteenth nw.....	G.....	II.....	1,000.00	910.00	70	637.00
East Executive avenue.....			1,790.00	1,734.60	70	1,254.22
Eighteenth nw.....	K.....	I (on asphalt block).....	3,419.00	2,998.80	70	2,699.16
K nw.....	Seventeenth.....	Connecticut avenue.....	1,463.00	1,484.70	70	1,039.29
			1,475.50	1,264.20		884.94
Total.....			11,675.50	10,703.68		7,492.57

Minor repairs.

88,357.64 cubic feet asphalt surface, at 44 cents.....	\$38,877.36
58,293.34 cubic feet binder, at 25 cents.....	14,573.33
2.57 cubic yards bituminous base, at \$3.....	7.71
Total.....	53,458.40

TABLE H.—*Work done by day labor under the appropriation for "Repairs to streets, avenues, and alleys," from July 1, 1908, to June 30, 1909.*

Brick sidewalk relaid.....square yards..	9,519	Asphalt tile relaid.....square yards..	975
Asphalt block repaved.....do....	8,455	Grading.....cubic yards..	5,045
Asphalt block paved.....do....	11,850	Graveling.....square yards..	785
Vitrified block repaved.....do....	5,605	Cement walk repaired.....do....	1,796
Cobble paved.....do....	4,832	Dangerous holes repaired.....	3,725
Curb reset.....linear feet..	580		
Flag laid.....do....	1,007	Labor.....	\$31,700.94
Flag relaid.....do....	880	Material.....	17,145.19
Granite block laid.....square yards..	3,116		

TABLE I.—Regular permit, 1909.

Job No.	Location.	For whom done.	Grading. Cu. yds.	Cement sidewalk. Sq. yds.	Curb reset. Lin. ft.	Curb set.			Vitrified block paved. Sq. yds.	Cost.
						6 by 20.	8 by 8.	Old.		
						Lin. ft.	Lin. ft.	Lin. ft.		
2000	West side Oak street nw., between Holmead place and Fourteenth street.	Harry Wardman.		237.93						\$294.79
2001	1312 East Capitol street.	B. Daly.		53.71						66.54
2002	South side Channing street nw., between North Capitol and First streets.	Harry Wardman.		487.89	718					757.32
2003	South side North Carolina avenue and B street ne., between Fourteenth and Fifteenth streets.	Kennedy & Davis Co.	155	377.76	31.2	477.1				1,049.46
2004	1222 to 1228 Girard street nw.	M. H. Herriman.		40.25						49.86
2005	East side Sixth street nw., from Pennsylvania avenue south to alley.	H. T. Wheeler.		163.4	10.4	163.16			13	415.92
2007	Corner Connecticut and Florida avenues (Florida avenue side).	Fred. B. Pyle.		102.08						113.90
2008	3619 to 3625 Tenth street nw.	Thos. J. & John I. Lane.		41.5			62			124.41
2009	Twenty-third street and Sheridan circle (Twenty-third street side).	Frank Ellis.		142.88						148.72
2010	1328 Connecticut avenue (Nineteenth street side).	Geo. Hill.		281.91			268.4			624.81
2011	North side Norton place, from Wisconsin avenue east.	Wear Bros.	105	173.51						264.59
2012	North side Emerson street, between Fourteenth and Brightwood, and north side Delafield street, between Thirteenth and Fourteenth.	B. F. Saul.		1,573.1						1,949.07
2013	Pennsylvania avenue, front of National Hotel.	Geo. H. Calvert, jr.		54						58.31
2014	Twenty-third street, between Cathedral and Connecticut avenues.	H. Rozier Dulany.		147.06		226.98	142.15	30		705.95
2015	Second and Rhode Island avenue, sides lots 2 and 6.	John L. Warren.		242.17	39.5					251.98
2016	Both sides Twenty-third street, between Woodley road and Calvert.	Kennedy Bros. (Incorporated).		216.08		320.76	153.4	29.15		895.44
2017	2406 to 2434 Garfield street nw.	Harry Wardman.		257.1	351					439.62
2018	1110 to 1122 Seventh street nw.	Berberich's Sons.		90.30	73.5					133.39
2019	North side Columbia road and south side Irving street, from Brightwood avenue east to alley, between M and N.	Blipp Bros.		188.97	35.12	9.42				259.05
2020	East side Half street sw., between M and N.	Appleton P. Clark, jr.		592.01	27.8	624				1,413.41
2021	West side Fifteenth street ne., between Ames place and B.	Kennedy, Davis & Co.		172.6						174.27
2022	East side Connecticut avenue nw., between Morrison and Calverton.	Thos. J. Fisher & Co.		1,029.64						1,284.95
2023	2220 G street nw.	Mattie R. Slater.		111.03						114.95
2024	2221 R street nw.	Geo. Oakley Totten, jr.		58.18	24					80.53
2025	3156 to 3164 Eighteenth street nw.	Swartzel, Rheem & Henzey Co.		97.2						120.43
2026	Alley, square 254.	W. H. Rapley.	29	502.66					89	154.74
2027	East side Connecticut avenue, between Morrison and Keokuk.	Fulton R. Gordon.								622.79
2028	East side Connecticut avenue, south from Morrison.	Thos. J. Fisher & Co.		124.14						153.81
2029	1106 G street nw.	Thos. C. Henderson.					22.29			41.62

2030	2726 and 2734 Sherman avenue and Girard street front.	Bates Warren.....	131.39				102.79
2031	North side of Q street n.w., from Twenty-second street west.	Geo. A. Fuller Co.....	147.54				150.86
2032	1335 Oakley street n.w.	Chandler Hale.....	127.15	142	4.71		170.34
2033	1363 Oakley street n.w.	Floyd E. Davis.....	94.07				116.55
2034	Intersection Massachusetts avenue and R street n.w.	Glenn Brown.....	108.18	43.37	79.66		345.23
2035	North side E street ne., between Fourteenth and Tennessee avenue.	Miss Frances Ebert.....			78.5		111.67
2036	South side N street, between Thirty-fifth and Thirty-sixth, Georgetown Hospital.	C. A. Didden & Son.....	35.63				45.17
2037	3627 to 3625 Tenth street n.w.	T. J. Lane.....	61.5		92		175.48
2038	L street side northwest corner Sixteenth and L streets n.w.	Wm. A. Smith.....	127.72	119			167.29
2039	South side of North Carolina avenue and A street, between Thirteenth and Fourteenth.	Wm. Murphy.....	138.57		152.83		339.73
2040	918 Nineteenth street n.w.	Geo. W. Evans.....	24.32	25.5			35.91
2041	1112 G street n.w.	Hugh Walls.....	717.77		26.65		32.08
2042	East side Eighth street se., from G to I streets.	Maj. Gen. J. F. Elliott.....	26.76				716.57
2043	2023 R street n.w.	W. J. Flahar.....			453.37		37.75
2044	North side of A street ne., between Fourteenth and Fifteenth streets.	Kennedy Bros (Incorporated).....					610.99
2045	1613 Thirtieth street n.w.	National Caryl Brewing Co.....	410			417	939.43
2046	W street, between Fendall and Taylor, lots 661 to 694.	J. Spring Pote.....	33.48	21			47.25
2047	1121 Robinson street sw.	W. E. Pearson.....	59.07				73.18
2048	Northeast corner Sixteenth and Church streets.	W. E. Pearson.....	10.09		14.53		30.48
2049	V street n.w., between Sixteenth and Seventeenth streets and east side Seventeenth street, between V and Florida avenue.	C. L. Manfieri.....	97.63	51.2			123.16
2050	2220 S street n.w.	Harry A. Kile.....	660.62		507.17		1,283.14
2051	North side Church street n.w., between Seventeenth and Eighteenth.	Frank L. Wagner.....	117.42				297.44
2052	434 Ninth street n.w.	Ellerson & Wemple.....	101.63		100.1		101.38
2053	West side Robinson street sw., between L and M.	Tom Moore.....	37.03	8.5			49.38
2054	Sixteenth street se., between C and D streets.	W. E. Pearson.....	19.69		30.77		61.05
2055	South Carolina avenue side, lot 19, square 1039.	H. C. Freitag.....	134.67				138.53
2056	Northeast corner Eleventh and Otis streets.	Harriet N. Whitcomb.....	131.32	20			135.87
2057	Fourth street from Newton, north to walk, west side.	Chas. Sonne.....	68.37				84.70
2058	802 to 816 K street ne.	Frank E. Altemus.....	140.44				174.00
2059	1532 to 1368 Quincy street n.w.	John H. Miller.....	132.2				135.97
2060	2636 Garfield street n.w.	Geo. C. Humphrey.....	101.87				128.32
2061	1334 to 1336 G street n.w.	Maggie V. Roche.....	15.05		20.05		42.82
2062	Falmont street, side lot 8, square 2863.	N. L. Burchell.....	73		37.15		141.55
2063	East side Seventeenth street n.w., north of Massachusetts avenue to alley.	E. P. Taylor.....	31.67				141.23
2064	East side New Hampshire avenue, between Park road and Newton.	Henry E. Pellet.....	67.48		76.81		193.46
2065	1304, 1306, and 1308 North Capitol street.	Dunigan Heating & Plumbing Co.....	227.43		49.2		293.49
2066	South side of D street se., from Kentucky avenue to alley east.	Wm. Murphy.....	71.78				88.93
2067	Phelps place and California avenue, side of the St. Rose Industrial School.	Thos. H. Melton.....	90				111.51
2068		James J. O'Connor.....	344.67	24			396.51
2069			12, 126.27	1,765.09	2,722.6	1,476.66	519
2070							21,093.82

TABLE K.—Assessment work, 1909.

Job No.	Location.	Grading. Cu. yds.	Cement sidewalk. Sq. yds.	Curb reset. Lin. ft.	Curb set.			Vitrified block paved. Sq. yds.	Asphalt block paved. Sq. yds.	Brick sidewalk repaved.	Cost.
					6 by 20.	8 by 8.	Old.				
					Lin. ft.	Lin. ft.	Lin. ft.				
3001	Alley, square 5501.....										\$4,583.60
3002	South side Kalorama road nw., between Eighteenth street and Champlain avenue.....										
3004	East side Connecticut avenue nw., between Dupont circle and Q street.....		174.53	185.00							205.34
3005	West side Tennessee avenue ne., from East Capitol to B streets.....		380.99								380.03
3006	West side Eighth street nw., from P to Q streets.....		743.08	23.00							750.85
3007	South side T street ne., between North Capitol street and Lincoln road.....		471.49								480.03
3008	South side Kalorama road, between Ontario road and Champlain street.....		237.21								238.71
3009	Alley, square 3508.....		173.22	26.00							224.12
3010	Alley, square 3121.....	1,120		113.00	9.42			1,157.00			2,337.15
3011	Alley, square 3504.....			60.00				322.00			937.02
3014	Alley, square 2855.....	2,250		60.00	18.84			612.50			1,054.02
3015	Alley, square 2854.....	225		21.00				359.00	1,500		3,805.38
3016	Alley, square 3118.....	221						236.00			1,093.55
3017	South side Bryant street nw., from Second street west to east line, lot 11.....		144.55			200.00					580.89
3018	Both sides First street ne., from H street to New York avenue.....				4,702.45	22.08					420.60
3020	North side B street nw., from New Jersey avenue to First street.....		167.68								5,979.03
3021	South side of H street ne., from Third to Twelfth streets.....		3,032.04								171.45
3023	South side of Maryland avenue sw., from Sixth to Seventh streets.....										3,071.00
3024	North side of F street nw., from First to Second streets.....		736.45				25.00				734.61
3026	South side of B street nw., from First to Second streets.....		384.29	350.92							489.04
3033	Both sides H street nw., from Twelfth to Thirteenth streets.....		321.99	78.00							339.66
3036	West side Eleventh street nw., from Old place to Spring road.....					238.50					321.72
3037	East side Twenty-second street nw., between P and Q streets.....		257.48	13.82		456.35					888.45
3038	South side Euclid street nw., between Fifteenth and Sixteenth streets.....		492.02								495.57
3039	West side Eighteenth street nw., between P and Q streets.....		256.85								336.34
3040	North side P street nw., between Twentieth and Twenty-first streets.....		218.40								218.54
3041	West side Eighteenth street nw., between N street and Massachusetts street.....		421.66								430.06
3042	Both sides P street nw., between Twenty-first and Twenty-second streets.....		49.00								66.28
3043	North side B street nw., between New Hampshire avenue and Twenty-first street.....		1,207.06								1,221.46
			990.05	647.65		29.47					1,258.06

3044	West side Eighteenth street nw., between Corcoran and R streets.....	72.91					91.01
3045	South side R street nw., between Nineteenth and Twentieth streets.....	359.16					515.99
3046	Both sides Seventeenth street nw., between Q and S streets.....	1,764.03			29.37		2,034.38
3047	Both sides Corcoran street nw., between Seventeenth street and New Hampshire avenue.....	1,345.37		12.23			1,554.51
3048	West side Connecticut avenue nw., between Kalorama road and Connecticut Avenue Bridge.....	331.46					330.63
3049	East side Connecticut avenue nw., between Wyoming avenue and Columbia road.....	374.40					375.56
3050	Both sides Sixth street sw., between D and E streets.....	474.60					1,103.64
3051	North side D street nw., between Fifth and Sixth streets.....	493.99			18.00		1,103.64
3052	East side Fourth street nw., between E and G streets.....	104.23		77.05			131.96
3053	Both sides N street nw., between Sixth and Ninth streets.....	723.00					1,715.61
3054	Both sides Second street nw., from F to G streets.....	1,015.76		632.12			1,549.69
3055	Both sides F street nw., between Second and Third streets.....	610.59					783.55
3056	Both sides Ninth street sw., from Virginia avenue to D street.....	790.19		77.00			811.89
3057	West side Ninth street sw., from Virginia avenue to D street.....	163.91					179.66
3058	West side Connecticut avenue, between California and Wyoming avenues.....	355.63		33.70			403.10
3059	Both sides F street nw., from Third to Fourth streets.....	504.10			19.37		508.41
3060	Q street nw., between New Hampshire avenue and Nineteenth street (north side).....	109.74					109.46
3061	Both sides of D street sw., from Ninth to Tenth streets.....	895.39					995.34
3062	East side Sixth street sw., from Virginia to Maine avenues.....	1,075.11					1,119.31
3063	Both sides Sixth street nw., from G to H streets.....	1,039.21		8.71			1,041.25
3064	South side D street sw., from Tenth street to Maryland avenue and Maryland avenue from D to Eleventh streets.....	326.34		207.81			586.51
3070	West side Sixth street sw., from B street to Virginia avenue.....	874.02					910.18
3071	North side Virginia avenue sw., from Third to Four-and-a-half streets.....	620.46					703.49
3082	West side Eleventh street nw., between Monroe and Otis streets.....				639.36		793.35
3086	Paterson street ne., between North Capitol and First streets.....	144.62		65.00			160.63
3089	West side North Capitol street, between V and Bryant streets.....	406		171.36			2,377.53
3100	West side Four-and-a-half street, between C street and Virginia avenue.....	650.58		485.00			764.05
3101	North side Virginia avenue sw., between Second and Four-and-a-half streets.....						1,430.18
3111	North side Maryland avenue sw., between Sixth and Seventh streets.....	914.41		1,054.03			913.49
3112	West side Seventh street sw., between Virginia avenue and D street.....	362.62					368.01
3113	Thirteenth street nw., from Columbia road to Park road (east side).....	412.78					511.43
3114	North side Kalorama road, from Nineteenth street to Columbia road.....	97.08					120.28
3118	North side I street ne., from Third to Fourth streets.....	255.05					256.51
3119	North side I street ne., from Second to Third streets.....	278.82		362.72			724.70
3121	East side Third street ne., from I to K streets.....	258.36					261.91
3128	South side Newark street, between Highland avenue and Thirty-third street.....	364.98		438.00			546.50

TABLE K.—Assessment work, 1909—Continued.

Job No.	Location.	Grading.	Cement sidewalk.	Curb reset.	Curb set.			Vitrified block paved.	Asphalt block paved.	Brick sidewalk repaved.	Cost.
					6 by 20.	8 by 8.	Old.				
		<i>Cu. yds.</i>	<i>Sq. yds.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Sq. yds.</i>	<i>Sq. yds.</i>	<i>Sq. yds.</i>	
3133	West side Twenty-first street, from O to Massachusetts avenue.										\$620.69
3140	East side Fourth street nw., from D to E streets.										403.21
3141	South side Maryland avenue sw., between Eleventh and Twelfth streets.										291.65
3142	Both sides D street nw., between Thirteenth and Fourteenth streets.				232.90						668.55
3144	North side Girard street nw., between Sherman avenue and Eleventh street.			3.80							162.63
3153	North side Oak street, from Fourteenth street east to alley.		131.26								97.41
3154	East side Fifteenth street nw., from Florida avenue to Chapin street.		78.63								792.60
3159	Both sides Jackson street ne., between Eighteenth and Twentieth streets.	51	583.02	27.45							685.30
3160	South side Garfield street nw., from Connecticut avenue westward.	2,200	580.93								103.60
3161	West side Connecticut avenue, between Wyoming avenue and K streets.		54.17	99.80							466.01
3162	East side Connecticut avenue nw., from Kalorama road to Connecticut Avenue Bridge.		452.63	29.50							391.02
3166	West side Eleventh street nw., between Park road and Monroe street.		389.90								171.55
3168	South side Maryland avenue ne., between Eighth and Ninth streets.		124.49								532.12
3169	West side First street ne., between K and L streets.		504.52	118.00							383.34
3176	East side Second street nw., between T and Todd streets.		379.13								283.02
3182	North side Kearney street ne., between Twelfth and Thirteenth streets.		240.45	229.10							527.64
3195	South side Kearney street ne., between Twelfth and Thirteenth streets.		416.70								511.77
3196	Both sides Massachusetts avenue, from Second to Plaza.		413.05								1,316.22
3197	East side Massachusetts avenue, from Second to Plaza.				9.42	1,042.68					418.80
3198	Both sides new Anacostia bridge (south approach).				48.04		554.00				805.67
3200	North side Lamont street, from Sixteenth street east to alley.										291.01
3201	East side Sixteenth street, from Lamont to Pine street (east side).		246.62								647.31
3202	East side Sixteenth street nw., from Newton to Oak streets.		512.20	27.30							245.07
3204	South side Summit place nw., between Monroe and Newton streets.		197.80								228.36
3204	South side Summit place nw., from Eighteenth street to a point 450 feet west.		183.23	8.50							1,370.66
3212	South side New Union Station Plaza, from between east and west intersecting points of Massachusetts avenue.					1,056.00					

3227	West side of New Hampshire avenue nw., between Rock Creek Church road and Monroe street.	78.71	4.71	1,476.03	250.13	98.51
3065	Both sides of Sixth street sw., from Virginia avenue to Missouri avenue.					1,858.70
3136	West side of Fourteenth street nw., between D and E streets.					338.43
3149	South side of Ingleside terrace nw., between Eighteenth and Nineteenth streets.				3.90	1,621.75
3151	Both sides Holmead place nw., from Monroe street to Olds place, and east side Holmead place, from Park road to Monroe.					2,736.76
3188	South side of Everts street, between Twenty-second and Twenty-fourth streets.				56.40	471.27
3203	East side Twenty-second street ne., from Everts to Franklin streets, and on north side Everts street, from Twenty-second to Twenty-fourth streets.	360.47				695.66
3210	South side of Fort drive, between Seventeenth and Eighteenth streets.	561.47				344.64
3067	Alley, square 400.	276.33				1,970.48
3088	East side Twenty-first street nw., between Q and Hillier place.					185.85
3097	Both sides of R street nw., between Vermont avenue and Tenth street.					362.23
3108	Alley, north half square 672.					751.31
3137	Both sides of S street nw., between Fifteenth and Sixteenth streets.					1,244.44
3157	Alley, square 374.				954.34	1,210.48
3174	Both sides of C street sw., between Tenth and Twelfth streets.			871.05		1,222.97
3175	Both sides of Fifth street nw., R to Rhode Island avenue.				583.00	681.86
3213	Alley, square 278.	238	16.00		458.00	1,218.00
3224	Both sides of New Jersey avenue nw., between N and O streets.					810.96
3137	Both sides of S street nw., between Fifteenth and Sixteenth streets.					1,244.44
3145	South side of Massachusetts avenue nw., between Twenty-first and Q streets.				954.34	138.98
3146	Both sides of Q street nw., between Twenty-first and Twenty-second streets.				99.95	302.86
3147	East side of Twenty-first street nw., between Massachusetts avenue and Q street.				231.51	129.33
3217	Both sides of New Jersey avenue nw., between P street and Florida avenue.				95.77	4,402.45
3269	West side of Sixth street ne., from I to K streets.			352.59		425.41
3066	Alley, square 240.	170				3,173.29
3150	Both sides of Sixth street nw., from U to W streets.					2,175.49
3103	Alley, square 286.		22.70			2,375.30
3104	Alley, square 268, Columbia College grounds.		20.00			2,304.70
3109	Alley, square 807.	498				2,834.56
3121	Alley, square 822.	372				1,743.09
3131	Alley, square 834.	510	30.00	9.42		1,035.81
3132	Alley, square 834.	894				1,643.06
3134	Alley, square 669.			18.84		226.00
3135	Alley, square 1044.	160				735.89
3276	Fort Drive roadway.	150				63.81
3184	Both sides of Luray place from Warder street to Park place.			849.89		1,101.37
3185	Both sides of Manor place from Warder to Park place.			870.75		1,080.39

TABLE K.—Assessment work, 1909—Continued.

Job No.	Location.	Grading. <i>Cu. yds.</i>	Cement sidewalk. <i>Sq. yds.</i>	Curb reset. <i>Lin. ft.</i>	Curb set.			Vitrified block paved. <i>Sq. yds.</i>	Asphalt block paved. <i>Sq. yds.</i>	Brick sidewalk repaved.	Cost.
					6 by 20. <i>Lin. ft.</i>	8 by 8. <i>Lin. ft.</i>	Old. <i>Lin. ft.</i>				
3064	Both sides of E street nw., from Ninth to Eleventh streets.			130.70							\$3,242.87
3072	West side of Fifteenth street se., from South Carolina avenue to C street.		1,451.24			1,358.1					438.50
3100	West side Four-and-a-half street sw., between C and Virginia avenue.		391.11	10.60	30.38						704.05
3117	Both sides of School street sw., from Four-and-a-half to Sixth streets.		650.58								2,086.77
3123	South side of F street sw., from Seventh to Eighth streets.		773.91	63.30	972.82						528.43
3130	North side of North Carolina avenue se., between Third and Fourth streets.		398.03	471.48							695.86
3170	West side of Third street sw., between Maine and Maryland avenues.		588.45	419.00							541.86
3171	East side Fourteenth street nw., from Pennsylvania avenue to F street.		410.70	405.22							1,004.10
3219	North side of C street sw., between Seventh and Ninth streets.		881.25	332.87							351.12
3222	East side Third street sw., between H and I streets.		532.50	137.50							375.84
3223	North side of Pennsylvania avenue se., between Thirteenth and Fourteenth streets.		340.19								908.75
3237	West side Fifteenth street se., from Pennsylvania avenue south to alley.	20	736.46	674.00							174.57
3270	Both sides of E street nw., between Eleventh and Thirteenth streets.		51.12	6.00	84.19						2,723.87
3271	West side Fourteenth street nw., between D and Pennsylvania avenues.		1,132.06	52.33		1,223.61	6.03				358.25
3272	West side of Four-and-a-half street sw., between L and M streets.		359.14								429.77
3274	West side of Park street, Anacostia.		338.48	363.00							925.51
3296	South side of Jackson street, between Taylor and Fendal streets.		303.02	10.10	427.47						563.92
3297	East side Seventh street se., from North Carolina avenue to C street.		448.52								1,142.82
3324	Alley, square 813.	104	495.73	6.40		406.09		206.00			542.20
3133	Alley, square 283.	91						171			464.94
3156	Alley, square 2560 a.										1,242.25
3167	East side of South Capitol street, between Virginia avenue and H street.				231.07				1,566		337.47
3214	Alley, square 2228.	1,589									4,112.49
3225	Alley, square 161.	21						178.00			310.80
3250	Alley, square 2860.	1,435						963.00			2,287.16
3300	Alley, square 2007.	2,178							1,815		3,073.06

3242	Alley, square 2629.	185				18.84			547	1,182.43
3243	Alley, square 1094.									325.50
3245	West side North Capitol street from L to Pierce streets.		428.03							1,222.52
3126	North side, F street nw., from Ninth to Tenth streets.		698.78			388.50				1,222.52
3155	Both sides North Capitol street from B to C streets.		1,069.71	24.60		1,065.76				2,456.01
3159	Both sides Jackson street ne., between Eighteenth and Twentieth streets.									2,115.81
3181	Both sides Twenty-second street ne., between Rhode Island avenue and Lawrence street.	2,200	1,151.53							1,079.14
3187	North side Otis street ne., between Tenth and Twelfth streets.	33	858.40							354.52
3193	West side New Jersey avenue nw., and west side Second street from I to K streets.		286.13							979.18
3194	Both sides New Jersey avenue nw., from K to L streets.		443.23	7.00	2.30	402.70				2,193.37
3192	East side New Jersey avenue nw., between Morgan and M streets.		1,118.14	53.50		809.75				387.39
3220	North side Massachusetts avenue ne., between Tenth and Eleventh streets.		384.16							509.47
3226	Fourteenth and Massachusetts avenue sides, square south of square 1036.		437.12	304.00						1,007.07
3231	East side First street ne., between B and C streets.		412.09		485.72					598.55
3233	South side of M street nw., from New Jersey avenue to Fourth street.		525.57							519.59
3234	North side M street nw., from Fourth street to New Jersey avenue.		235.92			220.66				486.84
3273	Northeasterly side Mills avenue ne., between Twenty-fourth and Rhode Island avenue.		378.77	317.00	15.71					1,246.85
3285	North side H street ne., between Third and Sixth streets.		1,006.33							2,420.37
3292	West side Sixth street ne., between H and I streets.		652.12	48.25		946.48				323.53
3308	South side of E street ne., between Second and Massachusetts avenue.		233.76	331.25						768.89
3313	Both sides Massachusetts avenue ne., between Second and Plaza.		443.42	13.00		257.34				1,596.58
3316	Both sides Seventeenth street ne., between Brentwood road and Irving street.		1,593.20							220.09
3319	East side New Jersey avenue nw., from Reservation 192 to O street.	202	109.47							311.05
3320	West side New Jersey avenue nw., from P to Q streets.		309.96							612.41
3321	Both sides New Jersey avenue nw., from Q to R streets.		611.84							1,359.44
3325	West side New Jersey avenue nw., from N street to reservation 191.		1,360.74							435.13
3326	West side New Jersey avenue nw., from R street to Rhode Island avenue.		436.32							523.06
3327	East side New Jersey avenue nw., from R street to Rhode Island avenue.		522.27							568.90
3328	West side New Jersey avenue nw., from Rhode Island avenue to S street.		568.22							130.95
3329	East side New Jersey avenue nw., between O and Fourth streets, and Fourth street between O and P streets.		131.28							510.74
			481.64			74.70	9.70			

a Not completed.

TABLE K.—Assessment work, 1909—Continued.

Job No.	Location.	Grading. <i>Cu. yds.</i>	Cement sidewalk. <i>Sq. yds.</i>	Curb reset. <i>Lin. ft.</i>	Curb set.			Vitrified block paved. <i>Sq. yds.</i>	Asphalt block paved.	Brick sidewalk repaved.	Cost.
					6 by 20. <i>Lin. ft.</i>	8 by 8. <i>Lin. ft.</i>	Old. <i>Lin. ft.</i>				
3330	West side New Jersey avenue n.w., between Fourth and P streets, and Fourth street between New Jersey avenue and O street.		431.11	27.15							\$726.55
3331	East side New Jersey avenue, from reservation 190 to Q street.		303.27			215.24					302.51
3336	North side E street ne., between Second street and Plaza.		526.11	8.20		304.35					903.87
3340	Both sides New Jersey avenue n.w., from S street to Florida avenue.		364.55								367.83
3343	South side Cathedral avenue, from Connecticut avenue to Woodley road.		702.55	1,169.60	46.00						1,184.85
3344	East side Twenty-seventh street n.w., from Cathedral avenue to Woodley road.			40.55	836.01	4.11					1,059.27
3345	West side Twenty-seventh street n.w., from Cathedral avenue to Woodley road.	145	582.42	16.20	863.32						1,887.22
3348	South side of G street n.w., between North Capitol and First streets.		486.72								491.80
3050	West side New Jersey avenue n.w., from N to Third streets, and Third street from New Jersey avenue to M street.		723.55								721.73
3052	East side New Jersey avenue n.w., between Morgan and Third streets, and Third street from New Jersey avenue to N street.		328.91								332.28
3067	Both sides of V street se., from Nichols avenue to Fourteenth street.						880.20				303.65
3068	Both sides of U street se., from Nichols avenue to Fourteenth street.	17,668	49,885.12	11,747.13	17,706.13	25.15	2,007.93				700.92
											183,260.85
								13,968.00			

TABLE L.—Statement of work done under appropriation for "Sidewalks and curbs, 1909."

Job No.	Location.	Cement sidewalk.	Curb reset.	Curb set.		Cost.
				6 by 20.	8 by 8.	
		Sq. yds.	Lin. ft.	Lin. ft.	Lin. ft.	
2500	North side of D street nw., between Fifth and Sixth streets, in front police court.....	255.70	155.35		9.42	\$294.83
2501	Reservation 178, south side New York avenue, between Fourth and Fifth streets.....					83.17
2502	Reservation, Maryland avenue sw., between Sixth and Seventh streets (south side).....	237.47				225.60
2504	Both sides Sixth street, between Missouri and Maine avenues.....	815.75				780.96
2505	D street nw., between Thirteen-and-a-half and Fourteenth streets.....	392.17				395.91
2506	Pennsylvania avenue nw., between Thirteen-and-a-half and Fourteenth streets (north side).....	1,289.49				1,247.37
2508	East side reservation, west side Twenty-second street nw., between P and Q streets.....	44.05				41.85
2509	Reservation 58, bounded by Twenty-first street, Massachusetts avenue, and Q street.....	338.38			445.81	914.35
2510	South approach to Connecticut Avenue Bridge, north Kalorama road.....	432.79				411.15
2511	East side Connecticut avenue, between McKinley and Northampton streets.....	351.95				417.85
2513	New Jersey avenue, front of reservations 160, 190, 191, and 192.....				736.23	944.42
2512	Reservation 173, between New York avenue and I street, between Eleventh and Twelfth streets nw.....				225.68	329.83
2521	North side of School street sw., between Four-and-a-half and Sixth streets, rear Engine House No. 4.....	27.50		33		64.07
		4,205.25	155.35	33	1,417.14	6,151.36

TABLE M.—Miscellaneous work, 1909.

Job No.	Location.	Appropriation.	Grading. C'u. yds.	Cement sidewalk. Sq. yds.	Curb set.		Brick sidewalk relaid. Sq. yds.	Granite block relaid. Sq. yds.	Cost.
					6 by 20. Lin. ft.	8 by 8. Lin. ft.			
6001	Third street sw., between Virginia avenue and D street.	Elimination of grade crossings, purchase, etc., of land, grading, etc.							\$80.95
6002	Restoration of surface conditions in vicinity of Plaza.								2,981.18
6003	N street ne., between First and Second streets.								758.95
6004	Approach to T Street Bridge, Fourth and T streets ne.				15.48				290.24
6005	Ninth street sw., between C and D streets.								54.00
6006	Sixth street, west from B street, north to D street south.								115.25
6009	Cement storehouse, Fourteenth and D streets sw.								75.00
6011	Front of Municipal Building.		96			632.74			366.81
6012	Cement storehouse, Fourteenth and D streets sw.								75.00
6013	Intersection of First and H streets ne.				87.05	8.00			173.80
6018	South side of Virginia avenue sw., between First and Second streets.								128.37
6019	North side of Virginia avenue sw., between Second and Four-and-a-half streets.								90.00
6020	Temporary and emergency work, northwest, southeast, and southwest sections.								1,379.01
6021	Four-and-a-half street sw., D to School streets.				148.36		1,525		631.00
6024	D street sw., from Tenth to Eleventh streets.								99.38
6025	Maryland avenue sw., Eleventh to Twelfth streets.								89.75
6030	First street ne., between H street and New York avenue.								750.27
6031	Approach to Tuberculosis Hospital.	Tuberculosis Hospital.							1,195.13
6034	South approach and east side north approach to Anacostia Bridge.	Approaches to Anacostia Bridge.							1,755.34
6035	New First street, between Plaza and G street.	Elimination of grade crossings, purchase, etc., of land, grading, etc.							95.62
6036	North side of D street, between Ninth and Tenth streets sw.								18.25
6048	Temporary roads around Plaza.								122.00
6049	Around the islands of safety in Plaza.	Elimination of grade crossings, improvement of Plaza.				1,499.20			1,976.76
6050	Front of Bennings engine house.	Building Hillsdale engine house, Benning.							39.10
6051	Storehouse, Second and N streets ne.	Contingent and miscellaneous expenses, 1907, site for property yard.							446.00

6055	Surface of islands in Plaza.....	Elimination of grade crossings, improvement of Plaza.				846.61
6058	Central islands in Plaza.....	do.			456.69	609.75
6061	West side Ninth street sw., from Virginia avenue to D street.	Elimination of grade crossings, purchase, etc., of land, grading, etc.	140.10			133.10
6063	Surface conditions in vicinity of Plaza.....	do.				3,283.63
6065	Eleventh street se., near O street.	Approaches to Anacostia Bridge.				79.25
6066	North approach to Anacostia Bridge.	do.				109.12
6068	South abutment of Anacostia Bridge.	do.				61.50
1500	North side of D street nw., between Thirteenth and-a-half and Fourteenth streets.	do.	152		290.68	451.93
1504	East side of Vermont avenue nw., from T to U streets.	do.			267.23	358.77
1505	Both sides of D street nw., from Thirteenth to Fourteenth streets.	do.			802.30	1,086.84
1604	North side Canal street sw., from D to South Capitol streets.	Southwest schedule.			385.93	503.71
1605	Tenth street sw., between D and G streets.	do.				396.04
1702	New Jersey avenue se., from I to L streets.	Southeast schedule.	100			100.25
1703	do.	do.		1,133.12		1,493.19
1704	North side of K street se., from Eighth to Ninth streets, and from Tenth to Eleventh streets and both sides of K street from Ninth to Tenth streets.	do.			1,052.77	1,365.52
1705	Pennsylvania avenue se., from Thirteenth to Fifteenth streets.	do.				156.60
1800	B street ne., from Fourteenth to Fifteenth streets.	Northeast schedule.	350			145.43
4351	First street se., between B and C streets.	Asphalting First street se.			40	133.50
4375	Delaware avenue ne., between B and C streets.	Asphalting Delaware avenue ne.				68.25
4416	V street nw., between Fifteenth street and New Hampshire avenue.	Paving V street nw., Fifteenth street to New Hampshire avenue.	225			90.00
4417	do.	do.				224.50
4426	North Capitol street, between T and V streets.	Paving North Capitol street.			181.33	25.00
4467	Thirtieth street nw., between Albemarle and Brandywine streets.	Grading and improving Albemarle street east of Connecticut avenue.				135.93
4477	Minnesota avenue se., from Pennsylvania avenue north.	Widen and grade Minnesota avenue.				187.17
4491	Massachusetts avenue nw., S to T streets.	Pave Massachusetts avenue nw.				57.00
4500	Barnaby road.	Gravel and drain Barnaby road.				806.72
4512	Webster street nw., Fourteenth to Sixteenth streets.	Grading and improving Webster street nw.				852.81
4541	Reno road.	Grading and improving Reno road.				1,731.75
4566	Sixteenth street nw.	Grading and improving Sixteenth street nw.	600			314.94
4577	Both sides of Randolph place ne., from North Capitol street to Lincoln road.	Pave Randolph place ne.			221.50	288.79
4601	Holmead place nw., Park road to Otis place.	Grading and improving Holmead place nw.				2,513.36
4611	Fifth street nw., between U and W streets.	Grading and improving Fifth street nw.				401.74
4621	Forty-first street and Western avenue.	Grading and improving Forty-first street and Western avenue.				1,321.37
4642	Both sides of S street ne., from North Capitol street to Lincoln road.	Pave S street ne.			166.30	217.50

TABLE M.—Miscellaneous work, 1909—Continued.

Job No.	Location.	Appropriation.	Grading. Cu. yds.	Cement sidewalk. Sq. yds.	Curb set.		Brick sidewalk relaid. Sq. yds.	Granite block relaid. Sq. yds.	Cost.
					6 by 20. Lin. ft.	8 by 8. Lin. ft.			
4651	Manor place, from Luray place to Warder street.	Grading and improving Manor street.	.....	.....	.....	.....	.....	.....	\$567.31
4652	Manor place, from Warder street to Park place.	.....	.....	.....	.....	.....	.....	.....	1,080.38
4661	Rittenhouse street and Western avenue to Chevy Chase Circle street and Western avenue.	Grading and improving Rittenhouse street.	.....	.....	870.75	.....	.....	.....	964.93
4662	Rittenhouse street and Western avenue.	.....	.....	.....	.....	.....	.....	.....	887.88
4681	Rittenhouse street, from Brightwood avenue to Ingraham street.	Grading and improving Ingraham street.	.....	.....	.....	.....	.....	.....	1,000.26
4691	Ontario place nw.	Grading and improving Ontario place.	.....	.....	.....	.....	.....	.....	1,276.40
4701	Ingliside terrace.	Grading and improving Ingliside terrace.	.....	.....	.....	.....	.....	.....	2,073.10
4711	Kearney street ne., Twelfth to Thirteenth streets.	Grading Kearney street.	.....	.....	.....	.....	.....	.....	33.75
4720	Emerson street nw., Brightwood avenue to Fourteenth street.	Macadamize Emerson street.	.....	.....	.....	.....	.....	.....	1,214.00
6029	Plaza, vicinity of Union Station.	Elimination of grade crossings.	.....	.....	.....	.....	.....	.....	369.73
6033	First and H streets ne.	.....	.....	.....	.....	.....	.....	.....	14.75
6077	Canal wall.	Emergency fund.	.....	.....	.....	.....	.....	.....	1,018.07
4641	S street ne., between North Capitol street and Lincoln road.	S street ne., between North Capitol street and Lincoln road.	.....	.....	.....	.....	.....	.....	76.00
4653	Both sides of Warder street, between Manor place and Luray place.	Grading and improving Manor place, Luray place and Warder street.	.....	.....	41.12	1,003.10	.....	.....	1,348.75
4663	Rittenhouse street and Western avenue.	Grading and improving Rittenhouse street and Western avenue.	.....	.....	.....	.....	.....	.....	1,307.25
4300	New Jersey avenue se., between B and C streets.	New Jersey avenue se., between B and C streets.	.....	.....	400.00	.....	250	.....	189.00
1402	Thirty-fourth street nw., between Q street and Reservoir.	Georgetown schedule.	.....	12.00	.....	.....	.....	.....	12.21
1403	.....	.....	.....	.....	.....	.....	.....	.....	.....
1508	Both sides of V street nw., between Tenth and Twelfth streets.	Northwest schedule.	.....	.....	.....	950.57	.....	.....	184.50
1803	Both sides of B street ne., from Fourteenth to Fifteenth streets.	Northeast schedule.	.....	.....	122.75	.....	.....	.....	1,276.93
1807	Both sides of Fourth street ne., from L street to Florida avenue.	.....	.....	.....	2,146.73	.....	.....	.....	153.27
4671	Talbert street, Anacostia.	Grading and improving streets in Anacostia.	.....	.....	.....	.....	.....	.....	2,066.68
4672	Fort Stanton road, between W and Galen streets and Galen street from Fort Stanton road to Green street.	.....	.....	.....	.....	.....	.....	.....	503.12
4677	Various streets in Anacostia.	.....	.....	.....	.....	.....	.....	.....	333.72
4436	Mills avenue ne.	Grading Mills avenue ne.	.....	.....	.....	.....	.....	.....	1,012.37
			1,523	152.10	879.12	5,527.34	250	1,525	54,981.06

TABLE N.—*Whole cost work, 1909.*

Job No.	Location.	For whom done.	Grading. <i>Cu. yds.</i>	Curb reset. <i>Lin. ft.</i>	Curb set.		Vitrified block paved. <i>Sq. yds.</i>	Cobble. <i>Sq. yds.</i>	Flag laid. <i>Lin. ft.</i>	Granite block. <i>Sq. yds.</i>	Cost.
					8 by 8. <i>Lin. ft.</i>	Old. <i>Lin. ft.</i>					
4213	Anacostia avenue near Deanwood.....	Washington Railway and Electric Co.	.....	.....	.....	.....	.....	.....	.....	.....	\$11.00
4238	Michigan avenue, opposite entrance Catholic University.	do.....	.....	.....	.....	.....	.....	.....	47	.....	19.50
6029	Plaza, vicinity of Union Station.....	Washington Terminal Co.	.....	.....	.....	.....	.....	.....	.....	.....	108.20
6039	Alley, square 1283.....	Edmund K. Fox.....	.....	.....	.....	.....	50	.....	.....	.....	39.69
6045	Morris road, Anacostia.....	Chas. H. Eizler.....	.....	.....	.....	.....	.....	.....	.....	.....	7.75
6049	Islands of safety in Plaza.....	Washington Terminal Co.	.....	.....	75.84	.....	.....	.....	.....	.....	102.79
6060	West carriage entrance Union Station.....	do.....	.....	.....	.....	.....	.....	.....	.....	.....	50.00
6067	West baggage room entrance Union Station.....	do.....	.....	.....	.....	.....	.....	.....	.....	.....	70.00
6070	Alley, square 471.....	James Martin.....	.....	.....	.....	.....	24	.....	.....	.....	8.19
6044	Terminal property around Plaza.....	Washington Terminal Co.	.....	.....	.....	.....	.....	.....	.....	.....	190.49
6047	Massachusetts avenue n.w., between North Capitol street and New Jersey avenue.	Capital Traction and Anacostia and Potomac River Ry. Co.	.....	.....	.....	.....	.....	245	.....	.....	1,567.23
6054	Water street, between Thirteen and a half and Fourteenth streets sw.	Pennsylvania R. R. Co.	2,150	.....	.....	700	.....	.....	.....	2,345	893.01
6059	North side Observatory grounds.....	Naval Observatory grounds	.....	.....	.....	.....	.....	.....	.....	.....	74.62
6064	Fountains in front Union Station.....	Washington Terminal Co.	.....	.....	593.82	.....	.....	.....	.....	.....	627.49
6014	North Capitol and Adams streets.....	Washington Railway and Electric Co.	.....	.....	.....	.....	.....	.....	.....	.....	69.40
6016	New York avenue side of Masonic Temple.....	Thompson-Starritt & Co.	.....	215.50	.....	.....	.....	.....	.....	.....	70.13
6073	First street east, from B street south to C street north.	Philadelphia, Baltimore and Washington R. R. Co.	450	.....	.....	.....	.....	.....	.....	.....	86.00
6091	First street se., between C and E streets.....	Anacostia and Potomac River Ry. Co.	.....	.....	.....	.....	.....	.....	.....	.....	920.00
			2,600	215.50	609.06	700	74	245	47	2,345	4,915.49

TABLE O.—Number of square yards and cost charged for repairs to cuts made by plumbers and others in streets, avenues, and alleys during the fiscal year ended June 30, 1909.

Item No. 1 shows the number of cuts repaired for various plumbers.
 Item No. 2 shows the number of cuts repaired and the cost thereof on "whole cost" work, to which 5 per cent is added for tools, clerk hire, etc., for the maintenance of the miscellaneous trust fund deposits, District of Columbia (operating account), which fund is used to pay all accounts for labor, material, tools, etc., used in this class of work, and also includes the work done for gas, electric-light, and telephone companies, which work is charged at other than the flat rates charged to plumbers.
 Item No. 3 shows the number of cuts repaired on account of sewer department and the cost of the same.
 Item No. 4 shows the number of cuts repaired on account of the water department and the cost of the same.
 Item No. 5 shows the number of cuts repaired for the work done on account of other appropriations of the District of Columbia and the cost of the same, also the cost of work charged against retents and appropriations of the General Government.

	Number.	Square yards.	Cost (amount charged).
Item No. 1.—Plumbers' cuts:			
Sheet asphalt.....	357	1,076.09	\$3,497.29
Granite block.....	182	765.16	1,147.74
Asphalt block.....	203	1,246.70	1,870.05
Vitrified block or brick.....	187	555.09	1,387.73
Cobble and rubble.....	194	535.18	321.11
Macadam.....	403	1,758.78	1,758.78
Granolithic walks.....	418	692.58	1,177.39
Brick sidewalks.....	874	^a 30,036	1,501.80
Bricks furnished.....		^b 20,605	206.05
Asphalt blocks furnished.....		^b 2,448	183.60
Vitrified blocks furnished.....		^b 9,323	186.46
Cuts repaired at actual cost plus 5 per cent.....	(c)		276.81
	2,818	6,629.58	13,514.75
Item No. 2.—Railroad, electric-light company, telephone company, and other corporations and individual depositors, account of whole cost work.....			
	3,170	60,232.08	118,683.98
Item No. 3.—Various appropriations of the sewer department.....			
	361	7,715.96	11,134.08
Item No. 4.—Various appropriations of the water department.....			
	1,338	9,031.04	13,068.53
Item No. 5.—Various appropriations other than the above, including repairs to streets, roads, street lighting, electrical department, improvements and repairs, assessment and permit work, elimination of grade crossings, contingent and miscellaneous expenses, parking commission, etc.....			
	629	6,282.12	20,451.74
	8,316	89,890.78	176,853.08

^a Feet, and not included in total number of square yards.

^c Included in number of macadam cuts.

^b Number.

TABLE P.—Grading streets, alleys, and roads, 1909.

Job No.	Location.	Grading.	Cost.
		<i>Cu. yds.</i>	
1900	Hauling in Rock Creek Park.....		\$802.75
1901	Shepherd street, from Fourteenth street, eastward.....	7,869	1,732.11
1902	Twenty-fourth street ne., between Irving and Lamont streets.....	5,260	986.56
1906	Bryant street ne., between Seventeenth and Nineteenth streets.....	960	104.25
1907	Square 4207, Sherwood subdivision.....	176	47.50
1908	Evarts street ne., between Twenty-second and Twenty-fourth streets.....	6,336	1,152.76
1911	Chesapeake street from Wisconsin avenue to River road.....	637	145.00
1922	Twenty-third street, Kalorama road to Wyoming avenue.....	1,193	216.00
1923	Meridian place nw., between Holmead and Fourteenth streets.....	1,200	196.12
1924	Oak place nw., between Holmead and Fourteenth streets.....	3,110	293.75
1925	Newton place nw., between Holmead and Fourteenth streets.....	240	41.75
1926	Alley, square 3068.....	184	107.87
1927	Idaho avenue, between Woodley lane and Macomb street.....	1,314	207.06
1928	Idaho avenue east of Wisconsin avenue.....	878	101.81
1929	Jackson street ne., between Eighteenth and Twentieth streets.....	2,318	482.37
1932	East side of Twenty-second street ne., between Evarts and Franklin streets.....	1,130	286.26
1936	Otis street nw., between Thirteenth and Holmead place.....	747	160.88
1937	Elm street nw., east of Fifth street.....	389	89.75
1938	West side of North Capitol street, between W and Adams streets.....	459	160.87
1940	Kearney street ne., between Twelfth and Thirteenth streets.....	250	73.50
1909	Florida avenue, block 3, Kalorama Heights.....	2,160	694.25
1942	Thirtieth street nw., between Brandywine and Chesapeake.....	708	237.62
1946	Thirtieth street nw., between Albemarle and Brandywine streets.....	1,500	369.94
1948	Cedar road, between Shepherd and Quincy streets.....	519	87.50
1930	Meridian street nw., between Fourteenth and Center streets.....	4,336	794.93
1931	Hamlin street ne., between Eighteenth and Twentieth streets.....	11,210	2,439.03
1935	Quincy street, between Fourteenth and Cedar road.....	311	57.25
1949	Twenty-third street nw., between F and upper B streets.....	3,168	734.50
1945	Otis street nw., between Holmead and Fourteenth streets.....	5,448	1,100.06
1947	Q street nw., between Twenty-seventh and Twenty-eighth streets.....	1,042	387.00
1952	South street nw., east of Thirty-second street.....	359	182.75
1934	Monroe street ne., between Thirteenth and Fifteenth streets.....	310	112.37
Total.....		65,721	14,586.12

REPORT OF THE ASSISTANT ENGINEER IN CHARGE OF STREET EXTENSIONS.

WASHINGTON, D. C., *Sept. 1, 1909.*

SIR: I have the honor to forward herewith the annual report of the operations of the street extension division, for the fiscal year ending June 30, 1909:

Reports and maps were sent to Congress on the following bills:

For the extension of Massachusetts avenue SE. from Fortieth street to Bowen road.

Extension of Minnesota avenue from Pennsylvania avenue SE. to Sheriff road NE.

Extension of Rittenhouse street NW. from Broad Branch road to Daniel road.

Extension of Park place, along west boundary of Soldiers' Home grounds, from Hobart place to Rock Creek Church road.

Extension of Newton place east and west of Georgia avenue.

Extension of Harvard street NW. to McMillan Park.

Extension of Franklin street NE. to Bladensburg road.

Extension of Girard street NW. to Fifteenth street.

Opening of a street from Nineteenth street NW. to Connecticut avenue south of Wyoming avenue.

Widening Sixteenth street NW. at Piney Branch Bridge.

Proposed change of street extension plan south of Michigan avenue, north of Evarts street, east of North Capitol street, and west of Glenwood Cemetery.

Of the condemnation cases held during the fiscal year 1908, the following action was taken after the annual report was submitted:

T street NW. from Rock Creek Drive to Thirty-fifth street. A verdict was rendered awarding damages amounting to \$31,287.06 and benefits assessed in the sum of \$26,806.14. This verdict was confirmed, but the District has taken an appeal on the ground that the verdict was not according to the provisions of Congress, which required the benefits to equal the damages and costs of the proceeding.

Kenyon street NW., Seventeenth to Mount Pleasant street. Case was dismissed, not having been filed within the time limit fixed by Congress.

New Hampshire avenue NW. from Petworth to the District line. Case dismissed for similar reasons.

Maps and plats were prepared for the following uses:

Dedication of part of Kearney street NE.

Dedication of part of Massachusetts avenue SE.

Dedication of part of New Hampshire avenue NE.

To widen Cathedral avenue NW.

To widen Meridian street NW., 2 maps.

Dedication of alley in square No. 1259.

Dedication of alley in square No. 2849.

Dedication of alley in square No. 2672.

Dedication of alley in square No. 653.

Opening and closing alley in square No. 337.

Opening and closing alley in square No. 810.

Opening and closing alley in square No. 2860.

Opening and closing alley in square No. 1802.

The total amount expended for land for school purposes was \$163,169.92. Of this amount \$34,604.80 was paid as the result of condemnations.

For other purposes, as shown by the statement below, \$6,856.72 was expended for purchase of land, making a total of \$170,026.64 in all.

The preparation of maps for condemnation is an undertaking of no small proportions. Great care is necessary in order that the plat may be prepared correctly, and a description is written of every individual piece of land to be condemned and the owner's name correctly stated.

When the jury makes up its awards descriptions are furnished not only of the land taken but of all property which is assessed for benefits. In a number of cases it has been necessary to prepare more than four hundred descriptions of land together with the name of the owner of each parcel.

Submitted herewith is a table showing the action on all condemnation cases filed during the year.

Very respectfully,

E. M. TALCOTT,

Assistant Engineer in Charge of Street Extensions.

Capt. EDWARD M. MARKHAM,

Captain of Engineers, U. S. Army,

Assistant to the Engineer Commissioner,

District of Columbia.

Condemnation proceedings filed during the fiscal year 1909.

STREET EXTENSIONS.

Subject.	Court docket No.	Act No.	Act approved.	Case filed.	Verdict filed.	Verdict.		Action on verdict.
						Damages.	Benefits.	
W and Adams streets west of North Capitol street.	769	147	Feb. 28, 1907	May 16, 1908	July 21, 1908			Confirmed Dec. 4, 1908.
Glard street n.w., west to Fifteenth street.	812	279	Feb. 26, 1909	Apr. 9, 1909	June 30, 1909		\$4,421.18	Not rendered.
Twentieth street, widening at Park road.	813	264	Feb. 25, 1909	do		\$2,428.00	2,800.14	Not yet confirmed.
New York avenue n.e., Fourth street to Bladensburg road.	819	211	Feb. 6, 1909	May 5, 1909				Case continued to Oct. 12, 1909.
Rittenhouse street n.w., eastward to Daniel road.	820	272	Feb. 25, 1909	May 14, 1909				Do.
Massachusetts avenue n.e. to Bowen road.	821	268	do	May 18, 1909				Do.
Ninth street n.w., Barry place to Euclid street.	822	278	Feb. 26, 1909	May 20, 1909				Do.
Minnesota street n.w., Pennsylvania avenue to Sheriff road.	823	267	Feb. 25, 1909	May 22, 1909				Do.
Road along Anacostia River.	824	336	Mar. 4, 1909	May 29, 1909				Not yet confirmed.
Albermarle street n.w., Wisconsin avenue to Murdock Mill road.	733	190	Mar. 2, 1907	May 7, 1907	June 25, 1909	5,000.00	5,400.00	

ALLEYS.

Square 2666.	768			Mar. 31, 1908	June 5, 1908	\$1,597.19	\$1,878.85	Confirmed July 10, 1908.
Square 1036.	784			Sept. 25, 1908	Dec. 23, 1908	1,300.60	1,317.69	Confirmed Feb. 9, 1909.
Square 3516.	785			do	Dec. 28, 1909	1,406.32	1,316.31	Do.
Square 2847.	788			Oct. 8, 1908	Jan. 16, 1909	597.33	1,137.24	Confirmed Mar. 11, 1909.
Squares 3530 and 3526.	789			Oct. 15, 1908	May 6, 1909	1,792.33	2,040.68	Confirmed June 18, 1909.
Square 2854.	793			Nov. 10, 1908	June 23, 1909	1,032.50	830.62	Not confirmed.
Square 2859.	794			do	June 23, 1909	1,031.76	1,231.23	Confirmed June 18, 1909.
Square 904.	796			Nov. 18, 1909	May 7, 1909			Case dismissed.
Square 2834.	809			Mar. 30, 1909	May 17, 1909			Case continued to Oct. 6, 1909.
Square 2580.	810			do	June 24, 1909			Not confirmed.
Square 1036.	816			Apr. 30, 1909				Discontinued June 10, 1909.
Square 32.	817			do				Continued to Oct. 6, 1909.
Square 1036.	832			June 21, 1909				Continued to Sept. 15, 1909.

MISCELLANEOUS.

Square 284, addition to site, Thompson School.	779			Aug. 7, 1908	Dec. 23, 1908	\$31,500.00		Award confirmed Mar. 10, 1909.
Square 2890, addition to site, Monroe School.	782			Sept. 11, 1908	Oct. 22, 1908	3,104.80		Award confirmed Nov. 9, 1908.
Square 2558, addition to site, Morgan School.	804			Jan. 21, 1909	May 7, 1909	8,478.40		Award confirmed June 11, 1909.
Building line on Park road.	799			Nov. 25, 1908	Mar. 11, 1909			Exceptions filed Mar. 31, 1909.

Purchase of land for municipal purposes.

	Square No.—	Amount.	Condemned for—	Total.
Addition to site of—				
Thompson School.....	284	\$55,000.00	\$31,500.00	\$86,900.00
Johnson School.....	2,673	39,775.00		39,775.00
Monroe School.....	2,890	10,933.12	3,104.80	14,037.92
Armstrong School.....	553			3,837.00
Lovejoy School.....	985			3,500.00
Phillips.....	1,215			15,120.00
To straighten line of Fourteenth street at Newton street nw.....				163,169.92
Site for engine house, square No. 79, lot No. 5.....				556.72
				6,300.00
				170,026.64

REPORT OF INSPECTOR OF ASPHALT AND CEMENTS.

WASHINGTON, September 14, 1909.

SIR: I have the honor of submitting the following report showing the operations of this office during the fiscal year ending June 30, 1909, summarized in the following tables:

Number of samples tested.

Hydraulic cements:	
Natural, brands 1.....	23
Portland, brands 9.....	8,555
Asphalts:	
Asphaltic cements.....	645
Asphaltic surface mixtures.....	307
Asphaltum oil.....	1
Bermudez, crude.....	1
Bermudez, refined.....	15
California.....	17
Fairfield.....	2
Gulf Refining Company.....	12
Kentucky rock asphalt.....	1
Texas.....	4
Trinidad Lake, crude.....	2
Binder stone.....	131
Limestone dust.....	13
Sands.....	366
Oil, residuum.....	25
Miscellaneous tests and analyses:	
Brick.....	2
Chloride, calcium.....	5
Hose, rubber.....	2
Journal compound.....	1
Lead.....	3
Naphtha.....	2
Oil—	
Cylinder.....	3
Engine.....	9
Road.....	13
Valve.....	2
Pitch, coal tar.....	4
Tar.....	3
Thermometers.....	24
Total.....	10,193

HYDRAULIC CEMENTS.

Number of barrels inspected and the average results of tests on same.

NATURAL CEMENT.

[The 23 samples represent 226 barrels, of which none were rejected.]

Brand.	Bar- rels.	Sam- ples.	Residue retained on 100- mesh sieve.	Initial set.	Water used.		Temper- ature of air and water.	Tensile strength per square inch.		
					Neat cement.	Two parts standard quartz.		Neat cement.		Seven days, 2 parts stand- ard quartz.
								One day.	Seven days.	
Shield.....	No. 226	No. 23	Per ct. 5.5	Min. 11	Per ct. 23.6	Per ct. 11	° F. 76	Lbs. 340	Lbs. 510	Lbs. 366

PORTLAND CEMENT.

[The 8,555 samples represent 84,397 barrels, of which 2,166 were rejected.]

Brand.	Barrels.	Samples.	Residue retained on 100-mesh sieve.	Initial set.	Water used.		Temperature of air and water.	Tensile strength per square inch.		
					Neat cement.	Three parts standard quartz.		Neat cement.		Seven days, 3 parts standard quartz.
								One day.	Seven days.	
	No.	No.	Per ct.	H. m.	Per ct.	Per ct.	° F.	Lbs.	Lbs.	Lbs.
Atlas.....	810	81	7.1	2 24	18.3	9.3	74	628	762	312
Do ^a		15	6.0	3 00	18.0	9.3	71	593	795	353
Dragon.....	18,275	1,827	5.3	2 00	18.6	9.3	77	606	801	344
Giant.....	400	40	5.8	3 00	18.7	9.3	80	552	859	354
Do ^a		30	6.1	2 40	18.7	9.3	76	388	718	332
Lehigh.....	500	60	8.9	2 30	17.3	8.7	82	489	792	319
Do ^a		30	6.4	4 00	17.7	9.0	75	417	782	335
Nazareth.....	16,485	1,648	4.6	2 25	17.4	8.9	77	403	768	303
Old Dominion.....	43,696	4,369	5.6	2 21	18.5	9.3	75	503	802	318
Security.....	1,481	165	7.5	2 24	17.3	8.7	74	351	741	300
Do ^a		15	3.9	2 15	18.7	9.3	72	277	573	237
Universal.....	200	20	4.0	2 00	18.7	9.3	71	334	825	312
Vulcanite.....	2,550	255	6.8	2 25	18.7	9.3	74	424	912	341

^a Samples submitted with bids for furnishing cement to the District government.

Barrels of cement tested during the year.

District of Columbia.....	36,579
Colburn Bros.....	16,825
Brennan Construction Company.....	16,500
Cranford Paving Company.....	^a 13,969
Use in Anacostia Bridge.....	450
Use in Aqueduct Bridge.....	400
Total.....	84,723

^a In this is included 100 barrels of mixed brands of natural cement not found in preceding table of natural cement.

BINDER STONE.

During the year there were examined for use by contractors in the laying of asphalt streets 131 samples of binder stone, representing 15,320 cubic yards, of which 335 cubic yards were rejected on account of inferior quality, softness of stone, and excess of dirt.

	Samples received.		Samples rejected.	
	Number.	Cubic yards.	Number.	Cubic yards.
Brennan Construction Co.	75	11,500	.....	.....
Cranford Paving Co.	51	3,485	5	335

LIMESTONE DUST.

This material is used as a filler to reduce the percentage of voids in the sand used in the asphalt topping mixture.

There were examined 13 samples, representing 346 tons, all of which passed the required degree of fineness (all passing 30 and not less than 85 per cent passing the 100 mesh screen).

	Samples.	Tons.
Brennan Construction Co.	7	175
Cranford Paving Co.	6	171

PETROLEUM RESIDUUM.

All residuum used this year by the contractors in their preparation of asphalt cements for laying sheet asphalt was the product of the Standard Oil Company and was found to be of good quality. A total of 25 samples was submitted by the contractors for test and examination, which showed the following:

	Number.	Gallons.
Brennan Construction Co.	20	110,000
Cranford Paving Co.	5	26,700

	Brennan Construction Co.			Cranford Paving Co.		
	Highest.	Lowest.	Average.	Highest.	Lowest.	Average.
Specific gravity,	0.9447	0.9296	0.9345	0.9333	0.9296	0.9319
Gravity, Baumé,	20.6	18.2	19.8	20.6	20	20.2
Flashed,	435	375	407	425	370	398
Burned,	510	475	494	495	465	483
Loss 400° F., 30 hours,	2.9	0.8	2	3.1	1.1	1.9

ASPHALTS.

Samples submitted of asphalt for use in the laying of pavements for the District by contractors showed the following percentage of bitumen soluble in carbon disulphide:

Brennan Construction Company.

Per cent.

1 sample Bermudez, crude, representing 2,487 tons, ^a 94.75

^a After refining.

Cranford Paving Company.

	Per cent.
14 samples Bermudez, refined, representing 350 tons.....	93. 11
17 samples California grade "D," representing 435 tons.....	99. 43

Washington Asphalt, Block and Tile Company.

2 samples Trinidad Lake, crude, representing 2,423 tons.....	a 51. 68
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ASPHALT CEMENTS.

Table showing penetration results of asphalt binder and topping used by the two paving companies during the year 1909.

	Asphalt binder cement.							Asphalt topping cement.						
	Number of samples.	Penetration.						Number of samples.	Penetration.					
		High-est.		Low-est.		Aver-age.			High-est.		Low-est.		Aver-age.	
		Office tests.	Yard tests.	Office tests.	Yard tests.	Office tests.	Yard tests.		Office tests.	Yard tests.	Office tests.	Yard tests.	Office tests.	Yard tests.
Brennan Construction Co.: Bermudez.....	236	78	75	50	62	69	69	234	63	61	47	49	56	56
Cranford Paving Co.: Bermudez.....	30	74	76	61	65	67	69	34	61	62	45	45	54	56
California grade "D".....	39	83	82	57	59	65	69	38	60	62	43	43	52	56

ASPHALT SURFACE MIXTURES.

During the year 307 samples were submitted for examination and analyzed. The following tables show the maximum, minimum, and average per cent bitumen contained, and the average mesh composition of sand used in the surface mixture:

	Bermudez.	California "D."
Number of samples:		
Brennan Construction Co.	233	.....
Cranford Paving Co.	35	39
Highest per cent bitumen:		
Brennan Construction Co.	11.7	.....
Cranford Paving Co.	11.9	11.8
Lowest per cent bitumen:		
Brennan Construction Co.	9.4	.....
Cranford Paving Co.	9.8	10
Average per cent bitumen:		
Brennan Construction Co.	10.6	.....
Cranford Paving Co.	10.7	11.1

Mesh composition of sand.

	Brennan Construction Co.	Cranford Paving Co.
Sand per cent retained on sieves having—		
20 meshes per linear inch.....	3.5	2.2
40 meshes per linear inch.....	21.1	19.5
60 meshes per linear inch.....	21.9	20.9
80 meshes per linear inch.....	24.7	25.2
100 meshes per linear inch.....	8.2	8
Passing 100 meshes per linear inch.....	20.3	24

a After refining.

INSPECTION OF SAND USED IN SURFACE MIXTURES.

For the Brennan Construction Company: Inspected 232 scows, equaling 29,000 cubic yards, of which there were rejected 16,750 cubic yards, or 57.7 per cent.

For the Cranford Paving Company: Inspected 75 scows, equaling 11,250 cubic yards, of which there were rejected 4,950 cubic yards, or 44 per cent.

The contractors for laying sheet asphalt have, during the year, experienced more or less trouble in procuring sand of suitable quality. At one time it reached a stage where it became necessary for one of them—the Brennan Construction Company—to suspend operations for about nineteen days. This, in my opinion, could have been avoided had those engaged in the dredging of the sand exercised due care in digging and washing the same.

MISCELLANEOUS ASPHALTS.

There were also analyzed during the year for experimental purposes samples of the following asphalts and reduced oils: Fairfield, Kentucky Rock, and Texas asphalts, and reduced oils from the Gulf Refining Company, Marcus Hook, Pa. The results of these tests are not shown in this report but are on record in this office.

MISCELLANEOUS.

During the year miscellaneous tests and analyses of various materials shown by foregoing table of "Miscellaneous tests" were made and the results obtained submitted to the respective divisions and departments submitting the material for tests.

Very respectfully,

J. O. HARGROVE,
Inspector of Asphalt and Cements.

Capt. EDWARD M. MARKHAM,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, D. C.

REPORT OF THE SURVEYOR, DISTRICT OF COLUMBIA.

WASHINGTON, D. C., August 12, 1909.

SIR: I have the honor to submit the following report of the operations of this office for the fiscal year ending June 30, 1909:

The work during the past year has greatly exceeded in volume that of any year during the existence of the surveyor's office. During the past year the receipts for work done by this office amounted to \$20,544.76. The greatest amount received in any one year previous to the past year was in 1906, when the receipts amounted to over \$17,000. This is an increase for the past year over 1906 of about \$3,000, or 16 per cent.

The receipts for the year ending June 30, 1908, were \$13,040.80, the increase for the past year over this amount being \$7,342.96, or 57 per cent.

The number of orders for surveys for the District of Columbia for the past year were 110, against 43 for the year previous. This is an increase of 67 orders, or 156 per cent.

The total number of orders for all classes of work by private parties during the past year was 4,070, against 2,801 for the previous year. This is an increase of 1,269 orders, or 45 per cent.

These figures show a phenomenal increase in the volume of work done by this office during the past year. This is attributed, in a large measure, to the prosperous business condition of the country and the healthy and steady growth of the city. This increase of work has been handled with the same force as in the previous year, necessitating very close attention to duty and long office hours for the employees.

I invite your attention to the increase in the receipts of the surveyor's office from \$4,939.75 in 1900 to \$20,544.76 in 1909. The receipts will show a uniform increase, except in 1906, which exceeded all other years except the past one, as heretofore stated.

Previous to the adoption of squares for the entire District, subdivisions of agricultural ground into lots and blocks were designated by local names, such as Chevy Chase, D. C., City View Heights, Saul's Addition, etc. These local names have been discontinued on all subdivisions now being made, and square numbers used in lieu thereof. While local names have been dropped, which is a great benefit to the office in matter of record, there have been recorded 24 large subdivisions of agricultural land taxed as

parcels against 17 for the previous year. These 24 new subdivisions comprise in all 114 new squares. This character of work involves a great amount of time and labor.

The following table is submitted as a matter of comparison and convenience, showing the relative increase in all classes of work over that of the past two years:

	Fiscal year 1906-7.	Fiscal year 1907-8.	Fiscal year 1908-9.
FOR PRIVATE PARTIES.			
Individual lots or parts of lots surveyed in city and county.....	1,847	1,461	2,277
Certificates of survey issued covering one or more lots.....	1,005	824	1,130
Duplicates of above recorded in survey certificate books.....	1,005	824	1,130
Separate surveys made to verify walls.....	663	560	818
Individual buildings inspected as to location of new walls.....	1,454	1,229	1,948
Walls moved before final certification.....	830	374	478
Large tracts in county surveyed, subdivided, and recorded.....	22	17	24
Outline surveys in county of unsubdivided tracts.....	64	57	92
Subdivision blanks prepared.....	358	433	598
Duplicate subdivision blanks prepared for assessor.....	358	433	598
Subdivisions recorded.....	308	391	583
Total of individual new lots in subdivisions.....	4,166	5,219	5,958
Plats of one or more recorded lots to accompany applications for building permits.....	929	883	1,305
Estimates of cost issued in triplicate.....	2,982	2,801	4,070
Plats made up on order of private parties.....	2,736	2,647	3,747
Total of fees paid to collector of taxes by private parties.....	\$15,102.75	\$13,040.80	\$20,544.76
FOR THE DISTRICT OF COLUMBIA:			
Surveys for the District of Columbia.....	63	43	110
Plats recorded.....	28	56	30
Indorsements on survey plats.....	1,005	824	1,130
Indorsements on wall-survey plats.....	663	560	818
Postal-card reports concerning walls to owners.....	663	560	818
Reports concerning walls to building inspector.....	855	733	895
Assessment and taxation plats recorded.....	(a)	252	252
MISCELLANEOUS.			
Total of surveys for the District of Columbia and private parties....	1,817	1,501	2,174
Total of plats, public and private, including plats drawn in books...	4,204	4,313	6,054

a Four large volumes.

The foregoing table shows an increase in all branches of work.

The number of lots surveyed in city and county were 2,277 for the past year against 1,461 for the previous year, which is an increase of 816 in the number of lots surveyed or 56 per cent. This is in addition to surveys for the District of Columbia and surveys and subdivisions of large tracts. This has added much work to the four field parties, while at the same time the average distance necessary for the men to travel in order to perform their work has increased on account of more improvements occurring in the outlying parts of the District. This has required the field parties at all time to give long hours to the work, there being no cessation in the work in the most severe winter weather.

I wish to take this occasion to commend the men for their loyalty and close application to their work.

The number of survey certificates issued during the past year was 1,130, against 824 for the previous year, which is an increase of 306, or 37 per cent. Duplicates of these survey certificates are kept in the office.

The number of subdivisions recorded during the past year was 583, against 391 for the previous year, which is an increase of 192, or 50 per cent. In the number of subdivision plats made there was an increase of 40 per cent over those for the previous year.

The number of plats for building permits issued during the past year was 1,305, against 883 for the previous year, which is an increase of 422, or about 48 per cent.

The miscellaneous plats and District work has increased, which has added to the work of the drafting force. Much of this work has to be done while parties ordering the plats wait for them to be drawn, so that their permits to build can be obtained without delay, thus necessitating a delay of other work assigned to the draftsmen, and sometimes longer hours for the drafting force to bring the work up to date.

In the last report of my predecessor, Mr. W. P. Richards, he called attention to the fact that these men were paid less than any other men doing the same class of work in

the District service, while their work requires speed, accuracy, and a thorough knowledge of the records of the office, and they can not be too highly complimented for the manner in which they have performed their work.

It is useless for me to mention in detail the increase in every item of work. The table above will show for itself. The work during the past year has been very exacting on every member of the force, and has prevented me from doing much work in establishing old property lines in old and undefined subdivisions, establishing street lines according to the permanent system of highways, and the preparation of new plats in place of old ones which have become dilapidated from long use and should be retired to prevent them from eventually becoming entirely destroyed by use. This is a class of work that should not be neglected, and it is hoped that an appropriation can be obtained to carry it on.

Public act No. 89, approved February 23, 1905, authorized the commissioners to divide the District into squares, so that in subdividing agricultural ground it would be designated by new square numbers, thereby preventing duplication and eliminating local names. This act also allows the assessor to designate old subdivisions by the new squares but does not provide for changing these old subdivisions by inserting the new square numbers on the records of this office. This has caused much confusion, the public constantly inquiring about their property under the assessment numbers, while the records of this office show only the old names and blocks. It is very desirable, and it is earnestly recommended, that an act of Congress be passed authorizing the placing of the new square numbers as now assessed on the old records of the office, so that deeds, transfers, and loans can be made according to the new designations.

In view of the increase in the amount of work done during the past year (almost double the number of orders for work), I consider it only reasonable to ask for an increase in the force, so that the public who pay for the work done can have prompt and efficient service. Large enterprises and big business transactions are oftentimes suspended pending a survey or subdivision. It is, therefore, good business to have the office equipped so that there will be no delay. The work is of such a character and of such responsibility that care, time, and deliberation must be given it.

Very respectfully,

MELVIN C. HAZEN,
Surveyor, District of Columbia.

Capt. E. M. MARKHAM,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, District of Columbia.

REPORT OF SUPERINTENDENT OF TREES AND PARKINGS.

WASHINGTON, D. C., *August 16, 1909.*

SIR: I have the honor to submit herewith my twenty-fourth annual report, covering the operations of the Office of Trees and Parkings during the fiscal year ended June 30, 1909.

A total of 3,983 young trees were set out on the various streets of the city and District during the year. This number exceeded that of the preceding year by 659 and is largely in excess of the record established in any year since 1885. The cost of this work, including miscellaneous nursery work, digging of tree holes, and the actual setting of the trees on the streets, was \$15,456.49. This represents a considerable increase over the sum expended for similar purposes last year and is an average cost per tree of \$3.88 for labor, which, added to \$1.41, the cost of lumber, straps, strap iron, and nails for each tree, equals \$5.29, the average total cost of individual planting—a liberal average. This increase in cost, nearly 16 per cent over that of last year, is due to several causes, principal among which may be noted the increased cost of skilled labor and the very large amount of nursery planting done.

Statement showing kinds and numbers of trees planted.

Ash.....	39	Sugar maple.....	273
Elm.....	626	Sycamore.....	978
Gingko.....	214	Red oak.....	64
Linden.....	155		
Norway maple.....	825	Total, fall season.....	2,408
Pin oak.....	316	Total, spring season.....	1,580
Pyramidal oak.....	3		
Silver maple.....	495		3,988

Activities in the nurseries during the year were confined principally to the spring season, and during March and April a total of 13,143 seedlings were transplanted from beds to nursery rows. These consisted of the following:

Elm.....	3, 250	Silver maple.....	2, 089
Pin oak.....	1, 290	Sycamore.....	6, 514

The following shows the kinds and numbers planted in each nursery:

Georgia avenue nursery:		E street nursery:	
Elm.....	2, 200	Elm.....	1, 050
Pin oak.....	1, 290	Silver maple.....	2, 089
Sycamore.....	4, 133	Sycamore.....	2, 381
	<hr/> 7, 623		<hr/> 5, 520

It will be noted that the greatest number of seedlings transplanted were sycamores, and I would here call attention to the extreme desirability of the sycamore as a street tree. This kind, which is rapidly coming to the front rank of desirable shade varieties, is quite as popular now as the silver maple once was, and has reason to be much more so, for it far surpasses it in desirable qualities. The streets of this city planted with sycamores are among the best shaded, and these trees require less care than many of the other varieties, in which respect they are like the pin, red oak, and Norway maple.

Trimming of street trees involved a total expenditure of \$2,560.63, and but little systematic work was undertaken. The silver maples being in such bad condition generally, blocks of these in various sections had to be "headed back," and much trimming of individual trees, on request and otherwise, was accomplished. The miscellaneous trimming and repair force, an emergency party which works all over the city, has been unusually busy during the year, more so, I should say, than at any time during the past fifteen years. Owing to the fact that this emergency work is widely scattered, and inasmuch as it demands prompt attention at all times, it is desired to equip this force with an automobile truck, somewhat similar to that used by the water department, to replace the present horse-drawn vehicles. This machine would do four times the service of the present equipment and would be more satisfactory in every way. It frequently occurs that winds have caused the fall of large trees and branches in such a way as to endanger life and obstruct traffic; at such times the vehicle requested would be invaluable, to say nothing of its usefulness in reaching conveniently such outlying sections as Tennallytown, Chevy Chase, Brookland, and Takoma Park, the necessity for which is very frequent. I would also add that the planting work would be greatly facilitated by its use. An item is included in my accompanying estimates for the purchase of such a truck, and its favorable consideration is earnestly requested.

Trees removed during the year numbered 1,975 and included 44 kinds, as follows:

Ailanthus.....	6	Red oak.....	17
Apple.....	3	Pyramidal oak.....	30
Ash.....	2	White oak.....	15
Catalpa.....	17	Swamp white oak.....	1
Cedar.....	4	Osage orange.....	16
Cherry.....	5	Peach.....	5
Elm.....	250	Pear.....	1
Ginkgo.....	9	Pine.....	1
Gum (sweet).....	2	Aspen poplar.....	50
Holly.....	1	Athenian poplar.....	20
Horse chestnut.....	3	Carolina poplar.....	125
Koelreuteria.....	1	Plum.....	1
Linden.....	114	Sycamore.....	348
Locust.....	30	Tulip.....	34
Norway maple.....	211	Dogwood.....	1
Red maple.....	15	Chestnut oak.....	1
Silver maple.....	461	Hickory.....	1
Sugar maple.....	98	Turkestan poplar.....	2
Sycamore maple.....	2	Chestnut.....	1
Mulberry.....	3	Walnut (black).....	1
Negundo.....	38	Willow oak.....	1
Pin oak.....	27	Pawlonia.....	1

Of the above trees, 1,607 were curb growths, and the vacant spaces caused by their removal have been listed for planting or recommended for abandonment (in which latter cases they have been paved over); 285 were removed from the parking (where they are seldom replaced); 55 were taken from sidewalks, 27 from alleys and unimproved roadways, and 1 from a school yard. Among the causes necessitating their removal were the following:

Dead, decayed, and dangerous:

Killed by gas.....	54
Killed or made dangerous by horses.....	43
Killed by salt.....	4
Unexplained.....	872

973

Street, building, and other improvements.....	743
Storms.....	58
Inferior specimens.....	164
Excessive shade.....	37

1, 975

The wiring of trees was confined to exposed locations, in front of stores and on business streets, and but little of this work was done. With the continued efforts of the inspector under this office in cooperation with the police department, it is hoped that the necessity for this wiring will soon be eliminated, and present conditions are favorable to that end. The work of wiring trees is expensive, and many fine trees have been permanently disfigured because of their outgrowing the wires.

Forty-four arrests were made during the year under the direction of this office, resulting in the collection of \$291 in fines and forfeited collateral, which, however, is not available for the use of this office.

	Cases.	Amount collected.
Fines imposed.....	5	\$70.00
Collateral forfeited.....	38	221.00
Dismissed.....	1	.....

The month of June brought the usual insects to attack the trees, in smaller numbers, however, than in recent years. By the thorough spraying with water from the street hydrants and other methods the trees were effectually cleared before appreciable damage was done the foliage. It is a well-known fact that insects play greater havoc with the older trees whose vitality has been weakened, and this fact was particularly evident the past year in that they were more prevalent in the central sections where the trees are older and where in greater proportion they have been injured in connection with building and street improvements.

Six hundred and fifty-eight official files passed through the office during the year, involving in their transmission the writing of 861 indorsements. Job tickets issued to foremen totaled 908, and the work on these necessitated the visiting of 2,724 separate locations in the city and county. In addition to these the assistant superintendent and inspector made 906 examinations of localities in response to requests, written and personal. The inspector, however, made but few of these, as his services were required almost exclusively on police work. Other work of the office included the preparation and transmission of 53 pay rolls, 39 transfer vouchers, and 95 requisitions for supplies. All official papers, job tickets, and inspections passed upon during the year have been indexed by name and location, which makes them readily accessible as a source of information. In addition, all official papers affecting the work of this division have been copied. The various card records introduced last July have proven of great value and are giving entire satisfaction. The office work of all kinds has been steadily increasing for three years, until now its volume is quite beyond the ability of the present force to properly handle. From time to time during the year it became necessary to detail the clerk in charge of yard to relieve the assistant superintendent of some of his indoor work, so that the inspection work could be brought up to date. This, however, was only a temporary measure, and could not be permanent, as the employee so transferred is much needed at the yard and can not be spared from that place. All the force has worked faithfully and well, and I take

pleasure in here acknowledging the same, for any success which has been attained in the care of the trees and the methods relating thereto is due in large measure to their untiring efforts and originaive inclinations. One increase in the clerical force and several in the salaries of the field workers are included in my accompanying estimates, and it is earnestly hoped that these matters will in their entirety be favorably reported to Congress.

In conclusion I would again urge favorable consideration of the recommendation contained in my last report to the effect that this branch of the engineer department be designated the "Trees and parkings division," instead of the parking commission. The proposed designation would be more in keeping with the work performed and, in my opinion, is a proper and desirable change.

Summary.

Trees on streets at close of fiscal year 1908.....	94, 035
Trees planted, fiscal year 1909.....	3, 988
Trees removed from streets, parkings, sidewalks and school yards, 1909 ^a	1, 948
Net increase of trees, 1909.....	2, 040
Trees on streets, in parkings, sidewalks, and school yards at close of fiscal year 1909.....	96, 075
(NOTE.—The above figures (balance at close of fiscal year) represents the total number of trees which are continuously under the care of this division.)	
Curb growths on streets at close of 1908.....	92, 418
Net increase of curb trees, fiscal year 1909.....	2, 381
Curb trees on streets at close of 1909.....	94, 799
Mileage of tree-planted streets, close of 1908.....	522. 50
Increase of mileage in fiscal year 1909.....	6. 76
Mileage of tree-planted streets, close of 1909.....	529. 26

Expenditures.

Appropriation (streets, 1909—parking commission).....	\$35, 000. 00
Total repayments (as shown hereinafter).....	5, 146. 94
Total working fund.....	40, 146. 94
Labor, cart, and wagon hire:	
Work at office (temporary employees).....	\$1, 833. 25
Miscellaneous nursery work.....	3, 165. 12
Digging tree holes.....	9, 896. 88
Planting trees.....	2, 394. 49
Trimming.....	3, 241. 88
Removing.....	5, 096. 39
Cultivation.....	2, 192. 96
Transplanting.....	96. 25
Wiring.....	165. 25
Removing old wires.....	364. 30
Removing old boxes.....	141. 50
Destroying insects.....	218. 25
Mowing weeds.....	259. 50
Repairing storm damages.....	135. 75
Staking and strapping.....	115. 87
Change of fence line (nursery).....	26. 50
Grading triangle, Ashmead place.....	186. 00
Photographing.....	20. 00
Gathering seed.....	87. 00
Care of street parkings (including improvement of District building lawn and Market Park).....	2, 193. 63
	<u>\$31, 830. 77</u>

^a In addition to this number, 27 trees were removed from alleys, unimproved roadways, etc., but these removals did not diminish the number included in the official count.

Special services:

Hire of bicycles for foremen.....	\$5. 00	
Repairs by property clerk's shop.....	75. 00	
Repairs to harness.....	15. 50	
Repairs to wagons (private firms).....	40. 00	
Repairs to water pipes.....	7. 86	
Telephone toll service.....	. 50	
Repairs to cuts in improved streets.....	12. 66	
		\$156. 52

Materials:

Adding machine.....	250. 00	
Car tickets.....	40. 00	
Forage.....	1, 856. 46	
Fuel.....	31. 11	
Harness and harness parts.....	73. 20	
Horses (two).....	465. 00	
Ice.....	4. 16	
Leather straps.....	75. 35	
Lumber (for tree boxes and stakes).....	3, 241. 00	
Lumber (miscellaneous).....	127. 14	
Nails, screws, bolts, etc.....	144. 52	
Nursery stock.....	292. 50	
Paints, oil, and glass.....	13. 34	
Photographic supplies.....	24. 40	
Rope.....	30. 29	
Soil, grass seed, and fertilizer.....	541. 59	
Stationery, printing, and office supplies.....	100. 36	
Steel and iron, horseshoes, etc.....	81. 91	
Tools, agricultural implements, etc.....	273. 24	
Veterinary medicines.....	19. 44	
Wagon and buggy parts.....	58. 10	
Miscellaneous.....	382. 21	
		8, 125. 32

Unexpended balance of appropriation..... 34. 33

Total..... \$40, 146. 94

Annual salaries expended during the year:

Superintendent of trees and parkings.....	1, 800. 00
Assistant superintendent of trees and parkings.....	1, 000. 00
Inspector.....	1, 000. 00
Foreman.....	1, 050. 00
Four foremen, at \$900 each.....	3, 600. 00
Clerk.....	750. 00

Total..... 9, 200. 00

Per diem salaries expended during the year, payable from appropriation for "Streets, 1909, Parking Commission":

One inspector, 313 days, at \$3.25 per diem.....	1, 017. 25
One copyist, 272 days, at \$3 per diem.....	816. 00

Total..... 1, 833. 25

Statement showing the sums expended during the year for purchase or maintenance of horses, harness, and wagons, together with the amounts paid for cart and wagon hire.

[Also included in material list.]

Forage.....	\$1, 856. 40
Miscellaneous items (including wagon sundries and veterinary medicines).....	615. 74
Total.....	\$2, 472. 14

Cart and wagon hire, as follows:

Carts, 2,591 days, at \$2.25 per diem.....	5, 829. 75
Wagons, 74½ days, at \$3.50 per diem.....	259. 88
Wagons, 324½ days, at \$4 per diem.....	1, 299. 00
	7, 388. 63

Total..... 9, 860. 77

Expenditures from various appropriations.

[Exclusive of parking commission.]

	Repay.	Direct.
Miscellaneous trust-fund deposits:		
Trimming, removing, and planting.....	\$2,118.32	\$663.05
Furnishing and equipping Municipal Building:		
Office fixtures.....		3.50
Postage fund, 1909:		
Miscellaneous official correspondence.....		30.00
Improvements and repairs, District of Columbia, 1909:		
Assessment and permit work (removing).....	300.85	18.00
Repairs to streets, etc. (removing).....	37.85	
Repairs to county roads (removing).....	72.47	10.00
Grading streets, alleys, and roads (removing).....	29.93	
Northwest schedule (removing).....	8.86	
Northeast schedule (removing).....	3.41	
Southeast schedule (removing).....	18.64	
Grading and improving Monroe street ne., between Michigan avenue and Tenth street, grading slope, planting honeysuckle.....		92.50
Grading and improving streets in Anacostia (removing).....	3.41	
Paving V street nw., between Fifteenth street and New Hampshire avenue (removing).....	9.45	
Widening Thirteenth street extended, between Park road and Monroe street (transplanting).....	57.35	
Asphalting First street se., between B and C streets (removing).....	3.09	
Paving Massachusetts avenue nw., between S and T streets (removing).....	2.10	
Grading and improving Sixteenth street nw. (removing).....	10.64	
Contingent and miscellaneous expenses:		
Engineer department allotment, hire of bicycles for use of foremen.....		49.04
Public playgrounds, 1909, equipment, etc.:.....		
Trimming.....	13.39	
Maintenance of Municipal Building:		
Improving lawn around Shepherd statue.....	57.23	
Elimination of grade crossings:		
Removing and planting.....	2,350.73	
Buildings and grounds, public schools, 1908:		
Site and 16-room building to relieve Mott School (removing).....	49.22	
Total.....	5,146.94	866.09
Totals combined.....		6,013.03

NOTE.—The repayments indicated above are also embodied in the table of expenditures from appropriation for "Streets, District of Columbia, 1909—Parking commission."

Respectfully submitted.

TRUEMAN LANHAM,
Superintendent of Trees and Parkings, District of Columbia.

Capt. E. M. MARKHAM,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, District of Columbia.

REPORT OF SPECIAL ASSISTANT COUNSEL ON GRADE DAMAGES.

WASHINGTON, D. C., October 4, 1909.

SIR: In the matter of the appraisalment of the damages which have resulted to real property in the District of Columbia by reason of changes made in the grades of streets, avenues, and alleys in connection with the Union Railroad Station and terminal work, I have the honor to submit the following report for the fiscal year which ended June 30, 1909.

There were 89 claims for damages heard and determined by the grade-damage commission during the year, involving 146 pieces of realty. In 46 of these cases damages were awarded landowners aggregating \$68,130, while in 23 of the cases the commission awarded no damages whatever to the claimants, for the reason that the damages alleged to have resulted to the properties under consideration had been offset by the benefits and advantages shown to have accrued to the property in consequence of the elimination of grade crossings, the establishment of the Union Railroad Station and terminals and the works, buildings, and improvements incidental thereto.

The Commissioners of the District of Columbia, or the property owners, expressed dissatisfaction with the appraisements of the commission in 36 of the cases tried during

the year, whereupon the supreme court of the District passed orders vacating and setting aside the appraisements of the commission and directing the United States marshal to summon a jury of seven citizens in such cases to appraise and determine the amount of damages to which the claimants are entitled, as provided by Section V of the act of Congress approved April 22, 1904, entitled "An act to provide for payment of damages on account of changes of grade due to construction of the Union Station, District of Columbia."

The sum of \$2,750 was saved to the District during the year by the compromise of 8 cases in which jury trials had been ordered by the court upon the filing by the Commissioners of the District of Columbia of expressions of dissatisfaction with appraisements made by the commission, as will hereinafter appear.

During the year there were 64 petitions for the allowance of damages filed, which make a total of about 800 petitions that have been filed with the clerk of the supreme court of the District of Columbia since the passage of said act of Congress approved April 22, 1904.

The appraisements made by the commission during the year are as follows:

Lot.	Owner.	Award.
Property abutting on Delaware avenue ne., between C and D streets, in square 683:		
Lot 25.....	Josephine H. Baner.....	\$2,300
Lot 24.....	Mary Howard, by Richard W. Tyler and Robert G. Rutherford, attorneys in fact.....	1,600
Lot 23.....	Mary B. Brick.....	1,750
Lot 26.....	James P. Barrett.....	Nothing.
Property abutting on G, H, and Second streets ne., in square 719:		
Part original lot 13.....	Maurice J. Sheehan.....	Nothing.
Sublot 31.....	Bridget M. McNamara et al.....	Nothing.
Property abutting on the east side of Delaware avenue, between C and D streets, in square 684:		
Lot 13.....	Robert A. Dore.....	650.00
Sublot 12.....	Julia Diviney.....	525.00
Lot 11.....	Caroline Miller.....	Nothing.
Lot 32.....	W. E. Seebree and Ida Seebree.....	850.00
Lot 31.....	Annie Whitehand.....	950.00
Lot 30.....	Henry Walter.....	925.00
Lot 29.....	Andrew F. Sperry and Hannah Sperry.....	1,125.00
Part lot 4.....	Frederick B. and Annie Dalrymple.....	Nothing.
Property abutting on the south side of I street se., in square 879:		
Lot 2.....	Dennis McCormick, executor, Julia A. Morgan and Monica McCormick, heirs. Peter J. Lynagh.....	400.00
Lots 3 and 4.....		50.00
Property abutting on the north side of I street se., in square 878:		
Lot 53.....	Louis Rosenberg.....	450.00
Part lot 2.....	Mary F. Newman.....	175.00
Part lot 3.....	Eliza V. Hodgson.....	175.00
Lots 4 and 5.....	Ann R. Eaton et al.....	1,850.00
Lot 43.....	August Brethauer.....	700.00
Part lot 43 and all of 45.....	Lizzie Buxbaum.....	1,600.00
Property abutting on the north side of I street se., in square 878:		
Lot 142.....	Cornelius J. Carmody.....	2,000.00
Lot 130.....	Gustave Lansburg.....	1,750.00
Lot 129.....	Samuel Ganss.....	1,700.00
Lot 128.....	Gustave Lansburg.....	1,700.00
Lot 134.....	Eugenia F. Luther.....	1,125.00
Lot 133.....	C. J. Carmody.....	1,125.00
Lot 132.....	Wm. Messink.....	1,100.00
Sublot 131.....	Sadie G. Wiseman, guardian for Horace M. and F. M. Jenkins.....	1,180.00
Part lot 47.....	Gertrude M. Headley.....	1,050.00
West 4 feet lot 47.....	Joseph W. L. Caldwell.....	1,050.00
West 22 feet lot 46.....	Nellie C. Caldwell.....	2,820.00
Property abutting on the east side of Sixth street se., in square 878:		
Lots 40, 41, and 42.....	J. B. Cralle.....	400.00
Part lots 12 and 13.....	Mary Dougherty.....	1,250.00
South half lot 12.....	Mary C. Kidwell et al.....	375.00
Lots 142, 143, 144, and 145.....	Alice E. Stevens.....	1,000.00
Property abutting on the west side of Sixth street se., in square 847:		
Part lot 20.....	Ida M. Barker.....	250.00
South 30 feet lot 20.....	Bartholomew Diggins.....	800.00
Lots 30, 31, and 32.....	John E. Herrell.....	1,150.00
Lots 33, 34, 35, 23, 24, 25, 26, 27, 28, 29, original lot 3, and south 20 feet lot 4.....	Edward M. Grinder.....	2,250.00

Lot.	Owner.	Award.
Property abutting on the south side of Virginia avenue se., in square 880:		
Part original lot 1.....	Edward Abner.....	Nothing.
Part original lot 1.....	James E. Howe.....	\$500.00
Part original lot 1.....	Henry Eberbach.....	Nothing.
Lot 6.....	Wm. L. Mahoney.....	100.00
Lot 3.....	Charles T. Sanderson.....	400.00
Part original lot 2.....	Mary Dougherty.....	400.00
Lot 7 and part 8.....	Henrietta Adams.....	985.00
Part lot 8.....	James Paul.....	485.00
Part lot 9.....	Wm. F. Phillips.....	500.00
Lot 17.....	Charles Schafer and Albert Schulteis, trustees.	1,000.00
Property abutting on the north side of K street, in square 880:		
Part original lot 2.....	John L. Mahoney.....	Nothing.
Part original lot 2.....	Wm. B. Mahoney.....	Nothing.
Sublots 10, 11, 14, and 13.....	Samuel W. Tucker.....	Nothing.
Part original lot 2.....	Mary Dougherty.....	Nothing.
Part lot 1.....	Catherine French.....	100.00
Sublots 5 and 4.....	Wm. L. Mahoney.....	Nothing.
Part original lot 1.....	John L. Mahoney.....	Nothing.
Part original lot 2.....	William S. Beachum.....	Nothing.
Property in square 849:		
Lot 10.....	Wm. H. White.....	160.00
Lots 11, 12, 13, and 14.....	Rose J. Menikheim.....	650.00
Lot 15.....	do.....	Nothing.
Lots 28, 29, 30, 31, 32, 33, and 34.....	Michael I. Weller.....	350.00
Lot 35.....	do.....	1,750.00
Lots 36, 37, 38, 39, 40, 41, 42, 43, 44, and 16.....	do.....	850.00
Lots 17 and 18.....	do.....	Nothing.
Lots 23, 24, 25, 26, and 27.....	do.....	Nothing.
Certain property in squares 737, 706, 905, and 906:		
Sublots 38 and 39, square 737.....	Albert Carry.....	Nothing.
Lot 20, square 706.....	James B. May.....	100.00
Lots 4, 5, 6, and 7, square 905.....	Mary Dougherty.....	Nothing.
Part original lot 6, square 906.....	do.....	Nothing.
Part original lots 6 and 5, square 906.....	do.....	Nothing.
Premises No. 711 Virginia avenue.....	Elizabeth Casper.....	Nothing.
Property in square 723:		
Sublots 29, 30, and 31.....	Henry J. Keough.....	Nothing.
Lot 85.....	John R. Beattie.....	2,300.00
Sublot 87.....	Emil G. Schafer.....	2,125.00
Lot 88.....	Wm. A. Leetch et al.....	2,125.00
Lot 89.....	Edward Haley.....	2,175.00
Lots 90 and 91.....	Sarah Barnum Hinds.....	4,250.00
Lot 92.....	George B. Rose.....	2,275.00
Sublot 93.....	August Donath.....	2,300.00
Sublots 42, 40, and 41.....	American Security and Trust Co., trustee.	Nothing.

The compromises effected with landowners during the year in cases wherein jury trials had been ordered by the court upon the application of the Commissioners of the District of Columbia are as follows:

Lot.	Owner.	Award.	Compromise.
Sublot 11, square 625.....	Johanna Collins.....	\$375.00	\$275.00
Property abutting on E street, square 628:			
Lot 60.....	Edwin B. Behrend.....	3,000.00	2,750.00
Lots 64 and 65.....	Michael Morris.....	2,550.00	2,000.00
Lot 66.....	Elizabeth H. Mueller.....	3,000.00	2,400.00
Property abutting on Delaware avenue, square 683:			
Lot 23.....	Mary B. Brick.....	1,750.00	1,450.00
Lot 24.....	Mary Howard et al.....	1,000.00	1,400.00
Lot 25.....	Josephine H. Bauer.....	2,300.00	2,000.00
Sublot 93, square 723.....	August Donath.....	2,300.00	1,900.00

There were no appraisements made by a jury during the year. A jury composed of Messrs. William T. Galliher, William F. Gude, John H. Nolan, Oscar J. Ricketts, Richard W. Henderson, Frank C. Henry, and Charles Werner was summoned by the United States marshal to consider the "appeal cases" pending, but owing to delay following an application made to the court by certain of the claimants for instructions to the jury none of the jury trials was concluded during the year.

This application for instructions, which was the first and only application that had been made for instructions to a jury in these cases, was granted, and the court, through Mr. Justice Anderson, gave to the jury the following instructions, which will in all probability be followed in future hearings:

“INSTRUCTIONS TO JURY.

“1. The jury are instructed that the damages to be estimated by them are the damages to the property described in this proceeding resulting from the change of the grade of Massachusetts avenue due to the construction of the Union Railroad Station and terminals in the District of Columbia; that such damages should be estimated with reference to the time the change was actually made, and the measure of such damages is the difference between the value of the property before the change of grade and its value just after the change. The jury may take into consideration in estimating such damages, if they find the same from the evidence, the cost or expense of adjusting the property to the new grade, the cost of filling in the lots, and the cost of retaining walls, if necessary, interference with access, and injury from surface water, if any there be, but these items can not be recovered by the property owner specifically as distinct elements of damages; they are only elements tending to show damages.

“2. The jury are instructed that the property owners are entitled to compensation for the net injury done them only. The jury, therefore, in estimating the damages that have resulted to the several pieces of real estate involved in this proceeding will consider any and all benefits and advantages that may have accrued to such property by reason of the elimination of grade crossings on the line of the Baltimore and Ohio Railroad Company, the establishment of the Union Station and terminals, and all works, buildings, and improvements authorized by the acts of Congress relating to the said Union Station and terminals, in reduction of the damages which may have resulted to said property from the change of grade, and if the jury find from the evidence that such benefits or advantages exceed or equal the damages the property owner is not entitled to recover, although he may have to incur expense in order to use his property.

“3. The jury are instructed that the market value of the property after the change of grade is not limited to the value for the purpose for which the property is used, but its value for any and all purposes must be considered. By market value is meant what the property would sell for in cash or on terms equivalent to cash when offered for sale by one who desires, but is not obliged, to sell to one who desires to buy, but is not obliged to buy; what might be offered by one who desires to buy for purely speculative purposes should not be considered as a basis for or in any way influencing the appraisalment. In ascertaining the market value of the property alleged to have been damaged by the change of grade the jury will take into consideration the most advantageous uses to which the property can be put by private persons or corporations, considering the size and location of the respective lots.

“4. In arriving at the cost or expense of adjusting the property to the new grade, the jury will consider the most reasonable and economical mode of adjustment, considering the condition of the property.

“5. The jury are instructed that there can be no award of damages made to the property owners based upon personal annoyance, discomfort, or inconvenience caused by the change of grade.

“6. The jury will consider the evidence submitted to them in the light of the knowledge obtained by their inspection of the realty alleged to have been damaged by the change of grade.

“7. The jury are further instructed that the burden of proof is upon the owner to prove the amount of damages to which he is entitled by reason of the change of grade whether to the realty or improvements. If such owner does not claim damages by reason of the depreciation in the value of the realty it is not incumbent upon him or the District of Columbia to adduce evidence of no appreciation or appreciation in the value of such realty as distinguished from the improvements. If the District of Columbia introduces evidence that the realty has been increased in value because of the elimination of grade crossings, the establishment of the Union Station and terminals, and works, buildings, and improvements authorized by the various acts relating to the Union Station, the owner may then introduce evidence in rebuttal thereof.”

About 50 cases were awaiting trial by jury at the close of the year. While a considerably larger number of “appeals” had been taken from the appraisements of the commission, many of them had been disposed of by compromises effected between the Commissioners of the District of Columbia and the property owners.

Up to the close of the year 42 of the cases in which appraisements of the commission were set aside upon the application of the Commissioners of the District of Columbia were compromised, whereby the sum of \$20,150, or about 20 per cent of the total amount of the appraisements made by the commission in favor of the property owners in these 42 cases, was saved to the municipality.

The total amount paid out by the District in settlement of grade damages, up to the close of the year, was \$319,331.10, which includes the appraisements of the commission from which no appeals were taken, the amounts paid in compromise of the 42 cases mentioned, and the appraisements made by "appeal juries."

The grade-damage commission was appointed by the supreme court of the District of Columbia in 1905, under the authority of the aforesaid act of February 22, 1904. At that time the law provided that the members of the commission and the jurors summoned in the grade-damage cases should be paid for their services, "when actually employed, the sum of five dollars a day."

Shortly after the commission entered upon the performance of its duties, the Commissioners of the District of Columbia, at my suggestion, submitted to Congress a recommendation which led to the passage of the act of June 29, 1906, which provides that the commission "shall receive for their services, when actually employed, such compensation as shall be determined upon by the supreme court of the District of Columbia as equitable and commensurate with the services rendered, not exceeding the sum of ten dollars per day."

In all cases heard by the commission since this act became operative I have consented to the payment of \$10 a day to each member of the commission as compensation. In the future, however, I shall request the court to fix the compensation of the members of the commission at \$5 a day, for the reason that the commission has now disposed of the most difficult of the grade cases, in so far as it lies within its power to dispose of them. There remain for the commission's consideration only a few sporadic cases in the vicinity of the Union Station, a few odds and ends in southeast Washington, and the cases in southwest Washington, very few if any of which will be troublesome or difficult of settlement.

I am of the opinion, therefore, that \$5 a day, the amount paid to jurors summoned in these cases and the rate of compensation definitely prescribed by the law for the commission at the time the commission was appointed will be reasonable and adequate compensation for the commission in these remaining cases.

Acknowledgment is due, and is most cordially extended, to Mr. Leonard P. Bradshaw and Mr. Gus. A. Schuldt, my assistants, for their untiring industry and efficiency in the discharge of their respective duties during the year.

I have the honor to be, very respectfully yours,

A. LEFTWICH SINCLAIR,
Special Counsel, District of Columbia.

Capt. E. M. MARKHAM,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, District of Columbia.

SUBSURFACE AND BUILDING DIVISION.

Capt. WILLIAM KELLY,

Corps of Engineers, United States Army, Assistant to the Engineer Commissioner, in charge.

WATER DISTRIBUTION.....	W. A. MCFARLAND, <i>Superintendent Water Department.</i>
WATER RATES.....	G. W. WALLACE, <i>Water Registrar and Chief Clerk, Water Department.</i>
SEWER CONSTRUCTION AND MAINTENANCE.....	ASA E. PHILLIPS, <i>Superintendent of Sewers.</i>
BUILDINGS, BUILDING INSPECTION, AND REPAIRS.....	SNOWDEN ASHFORD, <i>Inspector of Buildings.</i>
PLUMBING PLANS AND INSPECTION.....	H. B. DAVIS, <i>Inspector of Plumbing.</i>
PERMITS.....	H. M. WOODWARD, <i>Permit Clerk.</i>

REPORT OF ASSISTANT IN CHARGE.

OFFICE OF THE ENGINEER COMMISSIONER
OF THE DISTRICT OF COLUMBIA,
Washington, October 9, 1909.

MAJOR: I have the honor to forward herewith the reports of the divisions of the engineer department under my charge for the year ending June 30, 1909, as submitted by the superintendent of the water department, the water registrar, the superintendent of sewers, the inspector of buildings, the inspector of plumbing, and the permit clerk.

Very respectfully, your obedient servant,

WILLIAM KELLY,
*Captain, Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner.*

Maj. WM. V. JUDSON,
*Corps of Engineers, U. S. Army,
Engineer Commissioner, District of Columbia.*

REPORT OF THE SUPERINTENDENT WATER DEPARTMENT.

WASHINGTON, D. C., *August 26, 1909.*

SIR: I have the honor to submit the following report of the operations of the water department for the year ending June 30, 1909:

The cash collections during the year amounted to \$572,752.74, while unexpended balances from previous allotments and deposits for special work brought the total available funds up to \$666,270.89.

Cash payments and liabilities contracted amounted to \$598,123.92, leaving a nominal balance of \$68,146.97 for starting the new year. Against this are charged \$20,000 payment on pumping engine contract, and \$20,000 repayment on meter loan.

During the year 96,796 feet of water mains of all sizes were laid, as shown in detail in the accompanying tables, an increase of 19,557 feet over the work of the preceding year; 120 additional fire hydrants were erected.

The most notable results obtained are in the direction of decreased water consumption; not only is the per capita rate some 13 gallons less than for the preceding year, but the total mean daily consumption is reduced from 64,500,000 to 61,200,000 gallons, with a population increase of about 6,000. These gratifying results are attributable to three causes: The location and stoppage of underground leaks; careful house-to-house inspection, and the increased use of meters.

During the year underground leaks and illegitimate use of water were discovered and corrected, aggregating a flow of 9,561,000 gallons a day; a remarkable record, details of which will be found in the report of the pitometer division on page 58.

In this connection attention is invited to the accompanying diagram on which are shown graphically the population of the District, and the total and per capita water consumption from 1896 to date; also the number of meters in use, and underground leaks discovered and corrected.

The need for a systematic underground survey for leaks, as well as for the general installation of meters, has been recognized by the department for years, but until 1906-7 funds for these purposes were lacking.

The prompt results obtained are clearly shown in the diagram, the total consumption curve, as well as the per capita, beginning to drop, slightly in 1906-7 and sharply since then.

The uniform per capita rate in 1904, 1905, and 1906 was probably due to increased efficiency in local inspection work.

Had the use of water continued to increase at the rate which prevailed from 1900 to 1904, the present daily average rate would be about 81,000,000 gallons instead of 61,000,000, with a per capita of 235 instead of 178. In the absence of special preventive and corrective measures there is no reason to doubt that the rate would have so increased, especially as available water pressures throughout the District average more than 100 per cent higher than in 1896.

A mean daily rate for the year of 81,000,000 gallons would mean a maximum daily rate during cold weather of about 125,000,000; the capacity of the present conduit is 90,000,000 gallons.

Another notable result obtained was the increased economic efficiency of the pumping station. The "station duty" secured averaged 95,600,000 foot-pounds of work for each 100 pounds of coal burned, an increase of 17.7 per cent over the duty obtained during the preceding year. This represents an annual saving of 643 gross tons of coal, and there is every indication that there will be a still further improvement. This is in large part due to the work of the division of tests and experiments.

A detailed statement of cost of pumping, exclusive of interest and depreciation charges, is given on page 64.

In addition to its regular work, the pitometer division measured the flow of water to all of the principal federal institutions; the aggregate daily flow found was 8,583,000 gallons, or 14 per cent of the entire flow to the District of Columbia.

A brief summary of the duties assigned to each division and of results accomplished follow:

DIVISION A.—Maintenance and extension of distribution system.

[J. S. GARLAND, assistant engineer, in charge.]

SUBDIVISION A 2.—General engineering.

The work of this subdivision consists in the preparation of plans and estimates for water-main extensions and other allied construction, in all field work and records incident to the carrying out of these plans, and in engineering work of a miscellaneous character.

The subdivision is in charge of Mr. D. W. Holton, from whose report the following is taken:

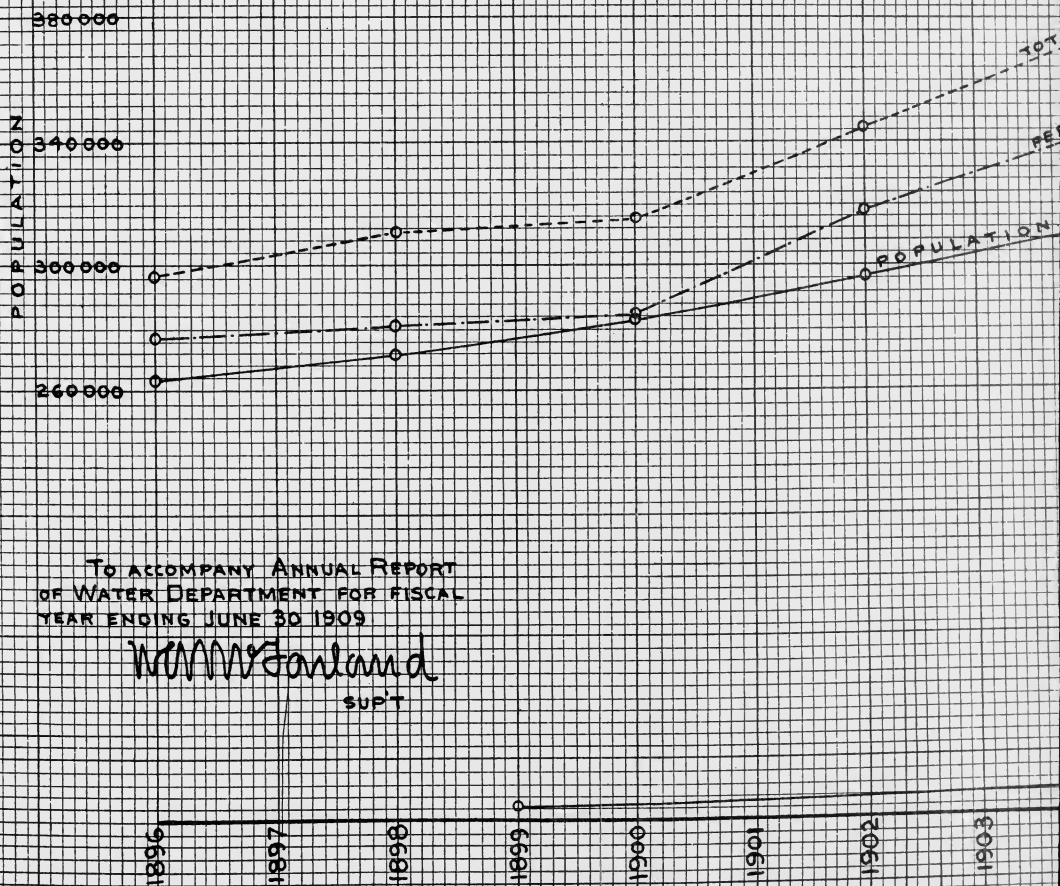
The subdivision has been continuously engaged in general engineering work, surveys, locations, office records, monthly pressures and miscellaneous projects and estimates. During the year pressures have been taken each month at 100 selected fire hydrants in the city and county covering the entire area of the fire-service system. Men detailed from subdivision A 5 have assisted in this work.

Twenty-three projects, including drawings and estimates, were prepared previous to the time that this work was taken up by the drafting subdivision, and 630 plats of completed work were recorded. These plats are drawn by the drafting subdivision from notes taken by the two field parties in making location of work in progress in connection with the extension of the water system.

From these cards permanent records are made as follows: Tracings, 50 and 100 feet to the inch; work posted thereon includes private services 2 inches and over in size; detector meter fire services, public hydrants, horse fountains, street washers, pumps, gate valves, air valves, fire hydrants, trunk and service water mains. These records are in the information room (310), and are open to the public. Tracings on a scale of 300 feet to 1 inch, on which are posted all water mains, cast-iron services, controlling valves, and blow-off connections. Blueprints from these tracings are extensively used in the field and office for reference.

Wall map, scale 400 feet to 1 inch, on which are recorded water mains, fire hydrants, and street washers.

An extensive card index showing length and size of water mains laid, the make and number of fire hydrants erected, the number, sizes, and make of valves installed in connection with each job, is kept to date.



TO ACCOMPANY ANNUAL REPORT
OF WATER DEPARTMENT FOR FISCAL
YEAR ENDING JUNE 30 1909

W. W. Farland
Supt

DIAGRAM SHOWING WATER CONSUMPTION, METERS IN U

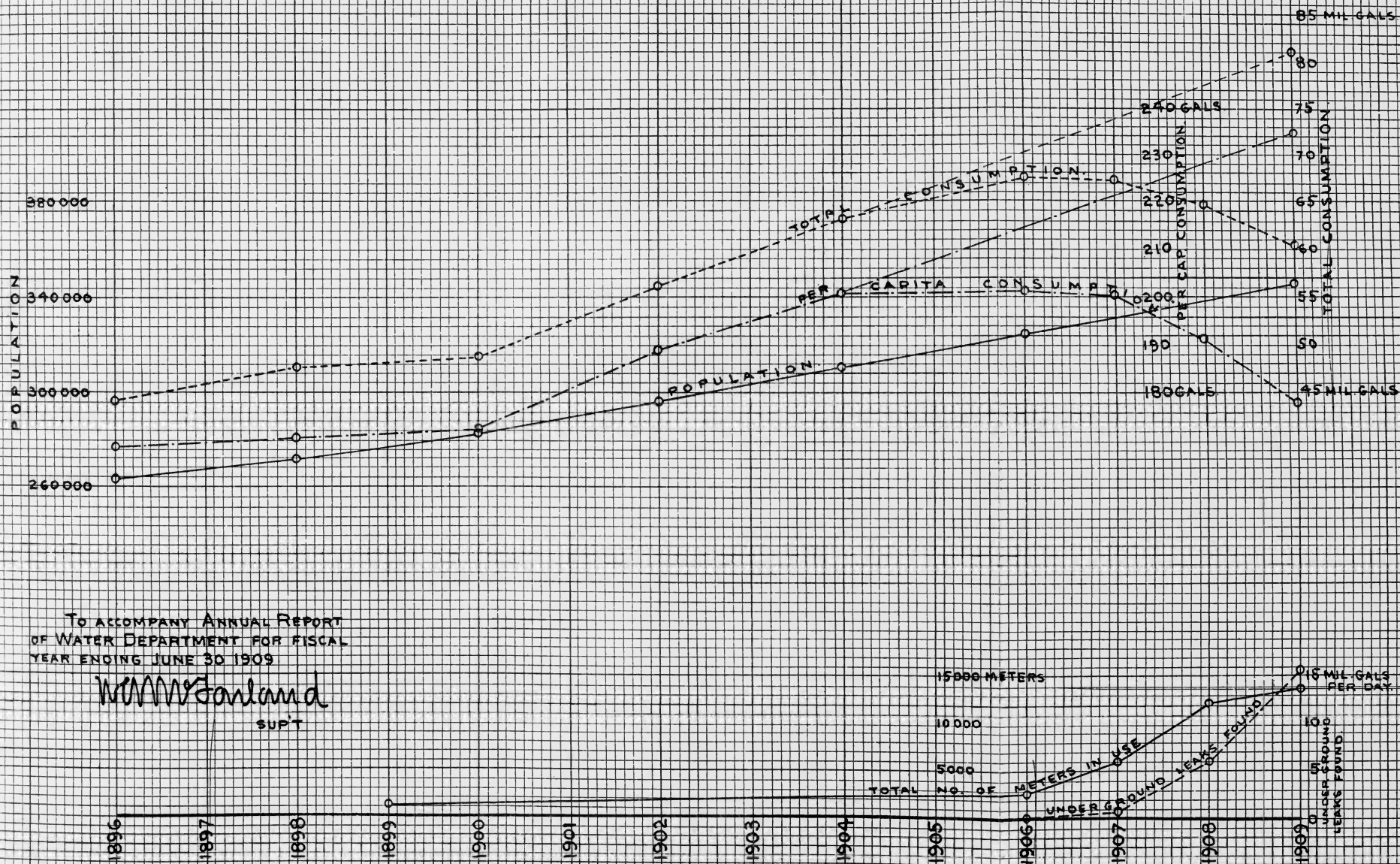


DIAGRAM SHOWING WATER CONSUMPTION, METERS IN USE, ETC., 1896 TO 1909.

All survey and record sheets, project tracings of proposed and completed work, are filed and indexed.

Three projects and estimates have been prepared for the extension of the first high-service system, the most important of which was the extension in sections of Bloomingdale and Eckington. Previous to this work this territory was mainly on the second high service, although legitimate first high area.

The first high service was extended to an area approximately bounded by I and L streets, Seventeenth to Twentieth streets NW. The principal feature of this extension was the laying of 900 feet of 12-inch water main in Seventeenth street, between I and L streets, connecting with the first high-service 20-inch main at Seventeenth and L streets. Another extension of the first high-service system occurred in the vicinity of 1719 N street NW. This extension covered only a small area in the immediate vicinity of the above-named premises.

The two field parties are constantly engaged in location work in progress, making surveys for new work and establishing elevations of fire hydrants newly erected.

Aggregate length of water mains of all sizes laid during the year 1909 was 96,976 feet, which represents practically the total length of surveys made and location work accomplished.

In connection with the extension of the different street car lines during the year, it was necessary to make extensive changes in the water system. Work was first undertaken at Seventh street and Florida avenue NW., early in October, 1908, laying a new line of 12-inch water main north of the proposed car tracks to replace old 12-inch main near the center of Florida avenue. This work extended from Eighth street to New Jersey avenue NW.; also a double line of 8-inch water main was laid in Florida avenue from Eighth street to New Jersey avenue and in T street, between Seventh street and Florida avenue; to these mains were attached all abutting house services. The 48-inch trunk main crossing Florida avenue just east of New Jersey avenue, was found to be too shallow to permit of the necessary deep constructions of the car tracks at this point; a new section of 48-inch main was laid in the south side of Florida avenue from New Jersey avenue to Fifth street. By far the most important changes in the water mains connected with this work were in New Jersey avenue between Massachusetts avenue and L street. Extensive changes occurred at the intersection of L street and New Jersey avenue along the line of 36-inch main, eastward from the 36 by 48 inch cross in the center of the avenue; this part was entirely reconstructed, making new 36 and 24 inch side connections to the south, the former joining the newly laid line of 36-inch main southward nearly to K street, the latter joining the old line of 24-inch pipe in the east side of New Jersey avenue between L and K streets. A new 12-inch connection between the west 30-inch and the 24-inch mains at K street was constructed to maintain the K street service, while work was in progress at L street. Both 30-inch mains were lowered from Massachusetts avenue northward for a distance of about 150 feet for the west 30 inch and about 100 feet for the east 30-inch main. A new 12-inch connection with the east 30-inch main and a new line of 12-inch pipe was laid to replace old 12-inch main under the H street car tracks from New Jersey avenue to First street west. Other changes were made at Massachusetts avenue and G street, such as the readjustment of the smaller mains, installation of necessary air valves, and blow-off connections; along Florida avenue from New Jersey avenue to Eighth street east a considerable amount of 6 and 12 inch water mains were laid. The old location of the 12-inch main being near the center of Florida avenue for a distance of over 2,800 feet, this main was abandoned and a new main laid in the north side of Florida avenue and all house services reconnected. Only in one square was it necessary to lay water main on the south side of Florida avenue. This was between Third and Fourth streets, where a new 6-inch main was laid and adjacent house services connected. In Eighth street east from Florida avenue to Pennsylvania avenue SE., and in F street, between the Union Station Plaza and Eighth street NE., double lines of 8-inch water mains were laid equal in distance to about 10 city blocks, and all abutting house services reconnected. At the intersection of East Capitol, B, and K street with Eighth street east, the 30, 20, and 24 inch trunk mains, respectively, were cut and the original crosses were moved east to conform with the new line of 8-inch mains.

The new service mains were laid within the roadway of Eighth street, 14 feet either side of the center line of street, with only two exceptions—one at Maryland avenue and the other at H street. These variations were necessary to avoid existing underground constructions. The advantage of laying these water mains in the roadway lies in the fact that no curb boxes for street washers would have to be readjusted.

In many places peculiar arrangement of service pipes and taps were found, such, for instance, as where several houses on Ninth, between G and H streets NE., were served through one pipe tapped on the Eighth street main at G street. In all such cases these service pipes were reconnected to the new mains and water service established practically the same as before this work was undertaken.

Other changes less extensive were made for the Washington Railway and Electric Company on First street between B and E streets SE, and at New Jersey avenue and C street.

Late in June, 1909, a field party was engaged in work of rerunning a line of survey made in 1907 for a 20-inch water main (Reno reenforcement) from Sixth and Trumbull streets to New Hampshire avenue and Grant Circle. This is in anticipation of beginning this work early in the fiscal year 1910.

A new fire hydrant pressure card has been adopted, thereby doing away with the old repair card which was designed to show the cost of repair and maintenance of each fire hydrant. Nearly all of these old cards have been replaced with new ones, and all essential records of pressures have been copied on new cards. There yet remains considerable work necessary to check this fire-hydrant record with maps. The new card shows on what corner or side of street the fire hydrant is situated, when installed, its elevation, and its make. These cards were transferred to the care of this subdivision about one year ago.

SUBDIVISION A 3.—*Care of property.*

The work of this subdivision consists in receiving, inspecting, recording, storing, and issuing all material bought for the use of all branches of the department; preparing quarterly returns of unexpended property, and in preparing lists of unserviceable property for condemnation and sale.

The property office, located in the District pumping station on Bryant street, is open at all times, day and night. Mr. S. Q. Kline, storekeeper, has charge, and has regularly under his orders 1 assistant storekeeper, 3 skilled laborers, 1 pipe inspector, 4 laborers, and 2 watchmen.

SUBDIVISION A 5.—*Care and recording of valves, fire hydrants, street hydrants, etc., and care of reservoirs.*

This subdivision is charged with caring for and making and maintaining complete records of all valves, fire hydrants, street hydrants, etc.; with the execution of miscellaneous plumbing, and with general supervision over Brightwood and Reno reservoirs.

There have been cared for during the year 6,349 valves, 2,542 fire hydrants, 241 street hydrants, 128 drinking fountains for animals, 10 shallow wells, and 31 deep wells.

This subdivision is in charge of Mr. Humphrey Beckett. The following is a brief extract from his report:

Valves operated and cleaned.....	11,570
Valves packed.....	369
Valves fitted with new stems:	
3-inch.....	13
4-inch.....	4
6-inch.....	55
12-inch.....	1
Manholes cleaned.....	1,400
Number plates placed.....	463
Caps placed to indicate closed valves.....	16
Valves substituted for old:	
4-inch.....	5
3-inch.....	4
Indicator posts:	
Placed.....	11
Painted.....	14
Valves uncovered.....	106

(These are valves which are covered, owing to change in grade or from dirt being washed over them.)

Cut-offs made for construction work.....	63
Cut-offs for repairs.....	40
Cut-offs for pitometer division.....	2

(In cases where the cut-offs for water are complicated they are generally handled by this division.)

Investigations made to ascertain doubtful cut-offs.....	16
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Foremen cutting off for construction or repairs sometimes report that the valves controlling cut-off are not as shown on records. These cases are always investigated and corrections made if necessary.

Valves inspected to check normal position.....	32
--	----

(These are valves reported as not agreeing with position called for on index cards.)

Alley squares located.....	536
Alley square cards completed.....	504
50-foot scale maps corrected, owing to new work.....	1,021
Index cards corrected owing to new work.....	818
Intersections located.....	733

(Wherever new work is done intersections are relocated.)

Complaints of lack of pressure investigated.....	5
Complaints of foul water investigated.....	39

(Beginning in October and lasting through December, 1908, there was a general complaint of foul water in the territory supplied by Brightwood and Reno reservoirs. This was caused by an abnormal growth of algæ in the reservoirs. The mains in the territory affected were constantly flushed, until the reservoirs were cleaned and dried, and as long thereafter as was necessary to rid the mains of the foulness caused by the algæ in the pipes.)

Sample waters from Brightwood and Reno reservoirs are delivered semiweekly to the chemist at the Filtration Plant.

Brightwood Reservoir was drained and the walls and bottom cleaned. This was the second time during year. The first was during the fall when there were complaints of foul water.

Fire hydrants:

Inspected but not flushed.....	30,077
Flushed.....	14,007
Painted.....	170
Repaired.....	1,360
Lubricated.....	8,504

Street hydrants:

Repaired.....	227
Erected.....	30
Abandoned.....	41

Horse fountains:

Repaired.....	210
Cleaned.....	4,698
Erected.....	5
Removed.....	1
Locations changed.....	3

Pumps repaired.....	38
---------------------	----

Service pipes:

Repaired.....	82
Laid (house connections, etc.)—	
1½-inch.....	1
1-inch.....	4
¾-inch.....	5

Service pipes reconnected.....	37
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(These are services which have been broken by this department or when it has been necessary to change to new mains.)

"Smith" cuts made:

48 by 12 inches.....	1
36 by 8 inches.....	1
30 by 12 inches.....	1
20 by 12 inches.....	1
12 by 8 inches.....	3
12 by 6 inches.....	5
12 by 3 inches.....	1
8 by 3 inches.....	1
6 by 6 inches.....	2
6 by 4 inches.....	1

Laid 1,050 feet of 1½-inch service pipe on Rock Creek Church road, between Harewood road and Rupertsville, for public hydrant.

SUBDIVISION A 6.—*Laying mains, erecting fire hydrants, repairing leaks, etc.*

All miscellaneous construction work, except of buildings and machinery, is done by this subdivision. For a statement of routine work accomplished attention is invited to Tables 3 and 4, appended hereto, where such work is described in detail. As will be noted, the total length of mains laid exceeded 18 miles.

The total number of leaks in water mains and appurtenances reported to this subdivision during the year was as follows:

	Trunk mains (16- inch and under.)	Service mains (3 to 12 inch.	Service pipe (24- inch and under.)	Total.
Breaks.....	1	51	2	54
Joints.....	40	784	.....	824
Unclassified.....	.....	43	634	677
Total.....	41	878	636	1,555

In addition, a large number of false reports were received and investigated. The leaks here referred to are such as showed on the surface of the ground, and include none of those found by the regular underground survey carried on by Division F.

Transportation for the leak gangs is now furnished by two automobile trucks; a marked increase in efficiency has resulted. During the year the "reserve wagon" of the leak force was sent out only thirty times. This subdivision is in charge of Mr. S. H. Harding, foreman.

SUBDIVISION A 7.—*Building inspection and masonry construction, Mr. P. B. Grant, inspector, in charge.*

The principal items of work handled by this subdivision during the year were: Repairing roof of water tower and lodge, and floor of gate chamber at Reno Reservoir; rebuilding roofs and granite steps of gate houses at Brightwood Reservoir; putting cement floors in valve vaults; building tool house in rear of Brightwood Lodge; miscellaneous repairs to masonry at the District pumping station; building of brick walls around property yards; inspection of construction work on shelter building for employees; rebuilding concrete piers under aqueduct bridge across railway on line of Twenty-eighth street NE.; building of two brick vault chambers at New Jersey avenue and L street NW., and in addition a large amount of miscellaneous work, as shown in the report of the subdivision.

SUBDIVISION A 9.—*Miscellaneous drafting.*

The branch is in charge of Chief Draftsman F. W. Albert; the following summary is from his report:

Drawings and tracings made.....	902
Projects made.....	246
Mains recorded.....	35
Fire hydrants recorded.....	38
Horse fountains recorded.....	2
Public hydrants recorded.....	8
Bills of material.....	22
Cards for assessor made.....	75
Communications written.....	438

In comparison with the work completed in the previous year the above result will show the following per cent of increase:

	Per cent.
Drawings and tracings made.....	38.0
Projects made.....	33.7
Communications written.....	16.8

The increased result was obtained by an average of five over an average of four men employed during the preceding year.

The work of recording mains, fire hydrants, horse fountains, public hydrants, and bills of material did not constitute a part of the miscellaneous drafting work done by this division. Returns on this subject are included only to indicate that this assistance was rendered A 2 either during the absence of the regular recorder or in some rush seasons.

In detail the work comprising miscellaneous drafting, grouped under the several heads as mentioned above, is as follows:

Drawings and tracings were made of all water-main maps and of certain mechanical apparatus and other appurtenances which are used either in the shops, office, pumping station, reservoirs, lodges, or in the field. Drawings alone are made of the foreman's plats and are designed to show the work on each job as completed in the field. One draftsman devotes his entire time and energies to the construction of these plats, and even then it is frequently necessary to call upon one or others of the division to enable him to keep up with the constant influx of this work.

Pencil sketches are made of all private connections and meter installations as soon as foreman's plats for such work are completed. These are immediately forwarded to the water registrar for his information and action as an offset against possible mistakes made in meter charges, accounts, etc.

The six sections of the 300-foot scale map of the District, begun in March, 1908, have been under construction almost continuously from that date to the present time. However, an aggregate of about three months' time has been lost on this map through change of draftsmen and through the employment of the draftsmen whose particular duty is the construction of this map upon special emergency work at various times and for longer or shorter periods. In spite of this interruption the entire set of six sections has been completed in pencil and is now ready for the water mains, etc., which it was originally designed to show. Prior to inking in the maps the water-service contours, mains, valves, and fire hydrants are to be put on, when a final checking of the dedicated streets, roads, etc., will be made. After thus bringing the map as near to date as possible the several sections will be inked in as completed.

Upon the first of every month reports are obtained from all of the subdivisions in this department, and chart showing the organization of the distribution and revenue branches of the water department is corrected and kept posted to date. At the same time water pressures are taken by special parties upon 100 fire hydrants scattered throughout the distribution system. These are posted on special cards and in particular books. The hydraulic heads are figured and form part of the special map drawn at that time which shows in addition the water-service areas and trunk mains. Through this means the department is able to carefully watch the pressure and supply in all sections of the District and the available head of the various services is determined at these times and places where these pressures are taken.

In the first part of September a start was made upon a new series of county water-main maps. This new series is much needed, since the maps now in use either overlap or make the ultimate completion of the set impossible along the lines arranged. The 100-foot scale maps showing Anacostia and Twining City, southward, were practically completed, together with a number of 50-foot scale maps in the southeastern part of the city. Beside this new work the other 50-foot scale water-main maps were all corrected and checked with the old set of 200-foot scale maps, and the 100, 300, and 400 foot scale maps, both in our own and in the office of the water registrar, were kept checked and posted to date. Special index maps of the 300-foot scale tracings were made to accompany the seventeen sets of blueprints which were made from these tracings. The value of these sets of blueprints has been much appreciated by those having them in their possession. They have enabled the foremen in charge of construction work, the leak gangs, and all others holding these sets of blueprints to effect cut-offs or the segregation of the work of the distribution system with little or no difficulty, waste of time, effort, and hardship.

A large index map of the water-main maps was constructed and framed. This map enables anyone wishing to use the water-main maps to find the particular map desired with ease and convenience. Several large maps showing the distribution system were also made. These maps were to be devoted to special purposes at the time of construction and are not in the office at the present time. The water-service contours have been carefully plotted on the work-in progress maps, and the lines showing water-service areas have been plotted and corrected on the various maps which show them as changes through extensions and rearrangements of these services have taken place.

The log, begun in April, 1908, and designed to show graphically, through its several elements, the results attained at the pumping station, is kept continually posted to date by this division. At the end of the fiscal year 1908-9 the convenience of this log was apparent when the daily averages and results attained were charted by months, thus giving at a glance the daily average for the entire year.

A special chart showing the population, amount of water used, meters installed, etc., was plotted early in the year from the earliest records of the District obtainable to those of the present date. The object of this chart was to show graphically the

comparative per capita water consumption under the various conditions due to the progress of the times and new conditions.

Along the same lines of the chart showing the organization of the distribution and revenue branches of the water department this division drew another chart showing the organization of the District of Columbia government. Its purpose was to enable anyone to determine at a glance the immediate authorities in control of the several departments. Blueprints of this chart were given the other departments upon request.

Projects for the proposed extension of public water mains are made from records contained in the several departments and show adjacent property abutting the proposed water mains, water, sewer, and gas mains, electric conduits, curbs, pavements, etc. They are made for all water-main extensions applied for or upon recommendation by the health officer, chief of the fire department, engineer of highways, or similar officials that such extensions be made and for all special extensions deemed desirable by this department and tending to the betterment of the service. Projects for the replacement of water mains occasioned by the construction of new or the rearrangement of old car tracks have furnished one of the largest items under this head. The lines along Florida avenue, New Jersey avenue, Eighth street NE., First street and at various junction points provided the occasion for this work.

Additional projects were made and additional estimated costs computed to cover the extension of trunk water mains into the outlying sections of the county.

All projects, with some very few scattered exceptions, were made under miscellaneous drafting. Work upon projects is continuous and requires the almost undivided attention of at least one assistant draftsman.

In recording mains, fire hydrants, horse fountains, public hydrants, and pumps it is necessary to make records upon all the maps in the office. Until July 1 this included the 400-foot scale wall map, the 300, 100, and 50 foot scale tracings, special maps of horse fountains, pumps, and public hydrants, and upon certain card indices. Mains recorded include not only the mains themselves, but all connections, services, valves, the addition of special parts or fixtures, etc., which are installed as new work, removed, lowered, or changed in any form, and as reported by any of the several field parties of the department. Bills of material are compiled for each job of new field work as ordered and are to show the necessary materials for each piece of such work, the object being in this way to eliminate, as far as possible, unnecessary hauling.

Under the head of "Communications written" may be included all reports upon projects and files passing through this office as they pertain to the extension of water mains, applications for estimates for the installation of special private service connections, changes in existing mains and work of such similar character, writing of weekly reports, postal card followers for all information concerning the location of mains or fire-hydrant pressures as given out over the telephone, and the compilation and writing of special reports of such character as are referred directly to this division for disposal.

Early in November, 1908, the checking of the daily reports of the leak gang with water-main maps was begun. While purely routine in character, this continued work is gradually tending toward the complete perfection of our present water-main map records. Records of the size and location of the water mains in the many older and longer settled parts of the city are either unknown or of a very doubtful character. Leaks on these mains, repaired, located, and entered upon the leak gang's reports frequently enable the department, through the posting of these reports by this division, to ascertain the true size and location of a main whose existence heretofore was either unknown or doubtful. In the end this feature of the miscellaneous drafting work will prove to be of decided value and benefit to the department.

Associated with this work of checking the leak gang's reports and forming in the past part of the routine work under miscellaneous drafting, is the posting of new water main taps. These records are obtained from the cards turned in at the water registrar's office by the tapper after the water mains have been tapped by him in new house connections or services. The cards show the size and location of all mains tapped together with much other information. Many times the information obtained from these cards is of equal benefit as that obtained from the leak reports.

Part of the duty of this division is to furnish all officials or private individuals requesting same in person with verbal information upon any or all phases of the work done. The queries often necessitate lengthy research among the records, and cover many details of the work both past and present. While not difficult or exacting this duty consumes much time and energy, since requests for information are numerous and interfere with the performance of other duties.

Passing work to be done by the surface division, while necessary, is also time consuming and, in a measure, unproductive in returns to the department. Lists of jobs and locations of work to be done by the surface division are sent to the department. These are forwarded to this division for reference. Those jobs where water-main

work is necessary or in project are held, while the remainder are passed and returned to the surface division for execution. Upon the conclusion of the water-main work releases are sent to the surface division, and as far as this department is concerned the surface division work proceeds. The object of this system is to make the cutting and replacing of new pavements for underground work unnecessary in the immediate future after such pavements have been laid.

Another duty under "miscellaneous drafting" was assumed in June, 1909. This consisted of describing, arranging, and filing, in albums, photographs taken by the department photographer showing water-department possessions, underground work, and various constructions.

On March 9, 1909, the following order, in part, was issued by the Board of Commissioners: "That for the purpose of giving information of special assessments pending, but not actually levied, * * * the superintendent of the water department shall furnish to the assessor, on cards approximately 4 by 9 inches, the location and a brief description of all work of * * * laying water mains * * * in the District of Columbia ordered by the Commissioners; such information to be furnished immediately upon the actual commencement of such work. One card shall be made for each square or unsubdivided parcel affected by such work * * *."

The work of furnishing this information to the assessor was immediately undertaken by this division and has been continued to date. A copy of the morning report made out by the foreman of the department is furnished, and from this the new jobs are noted and cards constructed and immediately sent forward to the assessor upon the commencement of each new piece of work.

Early in September, 1908, this division made and began the daily posting of two work-in-progress maps. These show, by means of pins with colored heads, paper flags, and little attached cards what work is being done in the field, what work is ordered, and that which has more recently come up for consideration.

Other than the foregoing much work of a miscellaneous character is performed by this division. This includes indexing maps, mechanical drawings, blueprints, etc.; figuring and checking weights of cast-iron water pipe and special castings; changing names of streets on the various books and maps of the department to conform to the new street nomenclature; correcting drawings; furnishing special lists of horse fountains to the Humane Society, etc.

At the present time the force employed to do "miscellaneous drafting" includes 3 draftsmen, 1 acting as chief draftsman, 3 skilled laborers working as assistant draftsmen.

SUBDIVISION A 10.—*Telephone switchboard.*

A department telephone switchboard is maintained at the District pumping station, connected by means of 4 trunk lines with the system of the Chesapeake and Potomac Telephone Company, by 1 line with fire-alarm headquarters, 1 with police headquarters, and by 15 lines with the various divisions and branches of the department, reservoirs, etc. Practically all telephone business is transacted through this subdivision, which keeps in touch with the various field operations and is particularly useful in the transmission of current orders. One chief operator and 3 operators are employed, the service being, of course, continuous. In addition to the regular telephone business, the work of the subdivision consists in general in receiving and recording reports of leaks and transmitting orders for repair to the leak gangs; receiving and recording all fire alarms and transmitting same to employees designated to respond to second and additional alarms; receiving and recording reports of "fire hydrants out of service," and reporting same to the fire department; receiving, recording, and transmitting orders for hauling; keeping records of repair of fire hydrants, street hydrants, pumps, fountains, and wells; records of reservoir levels, of locations of new jobs for information of foreman, of daily consumption of water, etc.

During the year 95,582 telephone connections were made through this switchboard. H. C. Fowler, chief operator, is in charge, assisted by 3 operators.

DIVISION B.—*Stables and transportation.*

This division, under Mr. G. A. von Dachenhausen, is charged with the care and maintenance of the water department stables located in the rear of the pumping station and with all hauling and miscellaneous transportation, shoeing of horses, minor repairs to and painting of wagons, etc.

Following is a summary of the principal work accomplished:

Men employed daily in connection with the stables and transportation: Foreman, 1; skilled laborer, 1; blacksmith, 1; blacksmith's helper, 1; drivers, 36; maintenance of roads, 3 laborers and a watering cart.

The following have been furnished with transportation:

Four to six foremen with teams to haul fittings, move dirt, etc.; furnished one 4-horse truck to haul pipe and fittings; leak division, 1 single team; engineer division, 2 single teams; foreman, 1 single team; timekeeper, 1 single team; pitometer division, 5 single teams; water registrar, 2 single teams and 1 double team; valve division, 2 single teams and 1 double team; fire hydrant division, 2 single teams and 2 double teams; paver, 1 cart.

In addition to routine work the following was hauled during the year:

Cast-iron pipe:		
12-inch.....	tons..	659
8-inch.....	do.....	2, 306
6-inch.....	do.....	118
10-inch.....	do.....	4
4-inch.....	do.....	9
3-inch.....	do.....	8
20-inch.....	do.....	3
24-inch.....	do.....	20
30-inch.....	do.....	6
36-inch.....	do.....	53
42-inch.....	do.....	12
Valves from freight depot.....	do.....	48
Fittings.....	do.....	236
Lead.....	do.....	50
Machinery.....	do.....	30
Soil.....	yards..	507½
Fittings and valves.....	tons..	20
Trees.....	.....	90
Wooden blocks.....	tons..	17
Brick.....	.....	390, 000
Portland cement.....	barrels..	1, 974
General blacksmithing, wheelwrighting, etc.....	sets shoes..	545

DIVISION C.—*Inspection of machinery, pipe, specials, etc., at point of manufacture.*

During the year one inspector has been employed at Lynchburg, Va., on cast-iron pipe and specials manufactured for this department by the Lynchburg Pipe and Foundry Company.

DIVISION D.—*Revenue and inspection branch.*

For the work of this division attention is invited to the report of the water registrar, Mr. G. W. Wallace, appended hereto.

DIVISION E.—*Miscellaneous clerical.*

This division is charged with all work relating to records of contract material delivered, preparation of vouchers for contract and open-market purchases, transfer vouchers for work done by the department on deposit of cost, or for other departments on account; with transmission of all papers to their proper destinations; with keeping of all accounts relating to the employment of labor, expenditure of material, job costs, etc., and with making of requisitions for material as called for by other divisions and the handling of all miscellaneous correspondence.

During the year 3,289 vouchers and 2,417 "files" were received and forwarded; 618 requisitions for material made; 296 transfer vouchers prepared; 2,217 communications mailed; 308 card records made; 947 work orders transmitted; 1,003 official letters forwarded; miscellaneous papers handled, 14,878; letters received and filed, 550; 540 pay rolls prepared; and 17,832 material slips checked, entered, and filed.

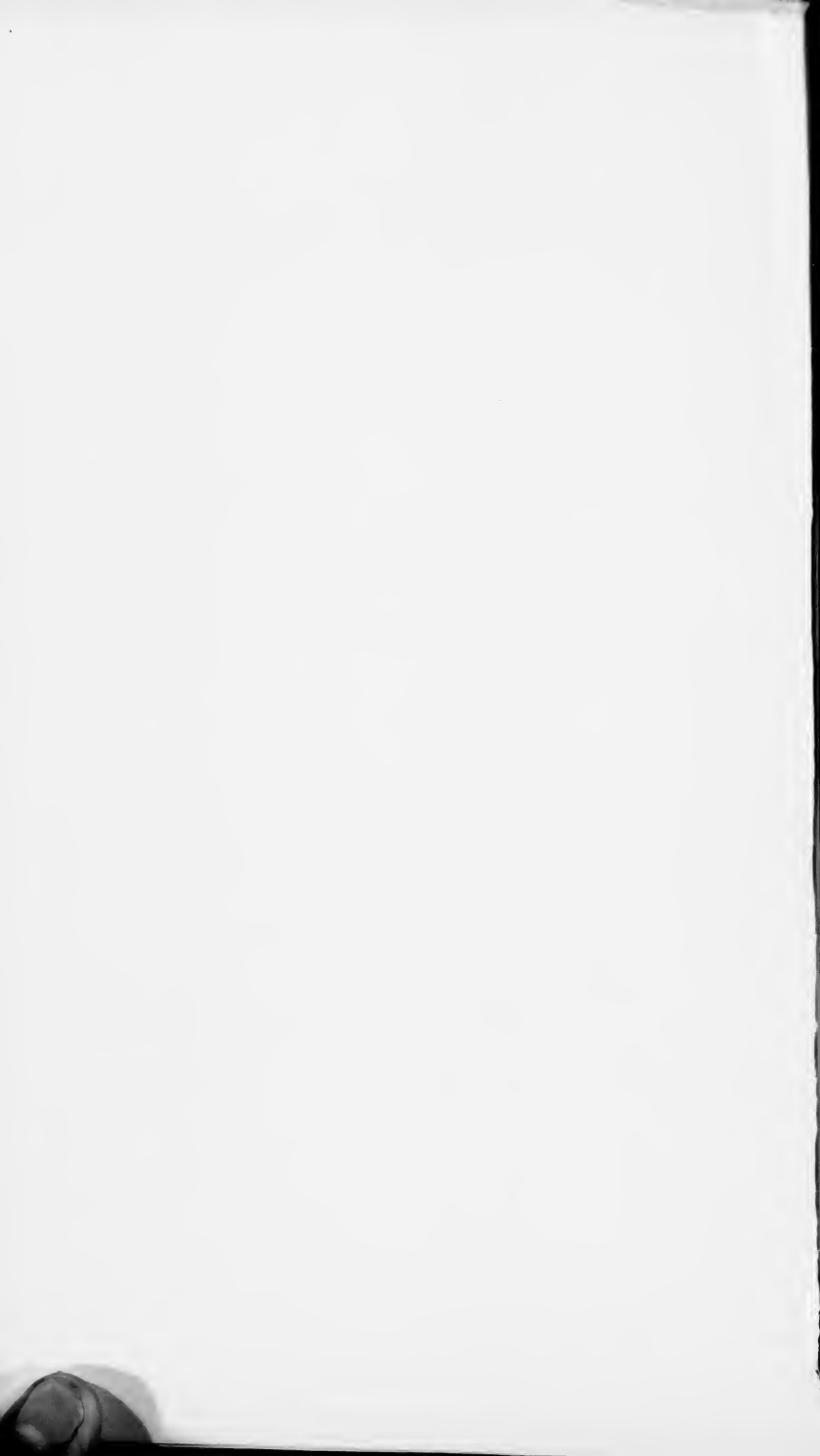
Mr. W. C. Small, clerk, has charge of this work.

DIVISION F.—*Pitometer surveys for the detection of waste.*

The work of this division is under the direction of Mr. Paul Lanham, from whose report the following is taken:

During the fiscal year ending June 30, 1909, the subdivision surveys were made in the first high and gravity service territory, and special gaugings and tests were made at various places, as detailed in the body of this report. The organization and





equipment of the pitometer division remained practically the same as during the administration of Mr. O. C. Smith, and the field work was continued on the same general lines as inaugurated and followed with so much success by him. A number of small changes were made, however, without departing to any marked degree from the former system, which, I believe, have resulted in greatly increased efficiency. Most important among these was the change in the method of reporting and recording the field work, rendering it possible to keep in close touch with the individual inspectors and insuring us against their failure to properly dispose of all leaks, both under and above ground.

Since the beginning of the year the records of the valve division, vital to the proper execution of our work, have been located at the District Building instead of at the pumping station as formerly, and this occasioned the loss of considerable time from the field work, as it is essential that all party chiefs should consult these records before operating valves. This disadvantage was offset, however, by having our own field wagons instead of the hired teams previously used.

No increase was made in the number of pitometers and the method of operation was the same as heretofore, with the exception of the use of an improved tube, designed to prevent the loss of recording fluid under sudden increases of velocity caused by the opening of fire hydrants or other large fixtures in the isolated territory. This trouble was general in the downtown section, and without the improvement the obtaining of records would have been impossible under the conditions. The use of the water jacket was continued and its efficiency was repeatedly demonstrated. Improvement in the records was noticeable throughout the year, due to the care exercised both in the field and in the process of development. Experiments were conducted with small storage batteries as a source of light for the records, and a type of battery and lamp was selected which, it is believed, will prove eminently satisfactory.

Repeated collisions of teams with the operating boxes, always resulting in damage to the pitometers, made necessary the erection of barricades around all boxes placed in driveways, and since these have been employed no accidents have occurred.

The inferior construction of the patented pitometer street connection makes its use decidedly objectionable, the operation of one of them six or eight months after installation being impossible without repairs. Connections in 8-inch casings can not be repaired without opening an excavation, and for this reason the use of this style casing was abandoned, all connections installed during the year being in valve casings on cement rings.

One additional clerk was employed, he being necessary because of the steady increase in the volume of office work. His duties comprised the posting and checking of card records.

At the beginning of the year the four field parties were engaged in the second survey of the first high-service mains, this having been deemed advisable on account of the continued high night rate of consumption, particularly in the northeast and southeast sections of that service. Considerable underground leakage was discovered regardless of the fact that the territory had been surveyed less than a year previous.

About August 1 work was started in the gravity service, and from that date to the end of the year the entire force was working in that service, with the exception of one field party, which spent about one month in the survey of a small portion of the first high recently transferred from the gravity service.

The most fruitful source of underground waste was found to be the service pipes, although the leaks on the mains represented a large percentage of the total amount, 5,214,015 gallons per day being chargeable to the former and 1,750,120 gallons to the latter of these causes.

The leaks on the service pipes were of varied origin. The corrosion of the black iron pipe was responsible for a large portion of the waste (Pl. 1, No. 1), and this, together with the leaking wiped joints on lead services and on lead connections to iron services, constituted the most important source of waste in this class. The defective wiped joints were due in the majority of cases to poor workmanship, numerous instances having been found where the wiping solder was of less than one-sixteenth inch thickness at the joint. (Pl. 1, No. 2.) Also in several places breaks were found at the wiped joints where the appearance of the lead indicated that its flexibility had been destroyed by overheating the pipe in the process of wiping. When this has occurred, a rupture would soon occur at the weakened point. (Pl. 1, No. 3.) A considerable number of broken services were found to have been caused by water hammer, freezing, electrolysis, and unequal settlement. The water hammer was due, principally, to the general use of the register yard hydrant, the type of valve in this hydrant rendering it entirely unsuitable for service in this city. (Pl. 1, No. 4.) Several breaks found could be charged to the freezing water in the pipe

(Pl. 1, No. 5), but only a few instances of the destruction of services by electrolysis were discovered, all in the vicinity of street-railway tracks. The damage by unequal settlement was almost totally confined to the iron pipes, lead services being rarely affected by this condition, and in the few exceptions the breaks were at the joints. The effect on the iron pipe was the fracture both laterally and longitudinally along the seam. (Pl. 1, Nos. 6 and 7.) Minor service pipe leaks were caused by the deterioration of the washer between the corporation tap and its coupling, broken stop cocks, probable due to the careless use of the curb key (Pl. 1, No. 8), and loose or defective taps.

Of the leaks on the mains more than 50 per cent of the waste was through the calked joints. This condition was due to the poor workmanship on the old mains (an insufficient quantity of lead having been used), to unequal settlement of the pipes, and to the vibration of mains caused by their proximity to street-car tracks. Referring to this latter trouble, in one instance the water main was in contact for several blocks with the iron yokes supporting the tracks and every joint was found leaking. In another case the two joints on a 6-inch sleeve immediately beneath the car tracks were found completely blown out, the sleeve being free to move in either direction on the pipe.

While only two actual breaks in mains were found, the amount of waste from them was large. No specific cause of one of these breaks can be ascribed, but the other was due to a sand hole in the casting. Decayed wooden plugs were responsible for considerable waste and one of the largest leaks uncovered was due to that condition. A number of leaks on fire hydrant valves were found, the water escaping through the waste valve into the sewer or porous soil. Two cases of leakage through cracked valves were caused either by defects in the castings or abuse.

During the year a number of special investigations were made, and, incidental to the routine work, 832.9 feet of unrecorded main and 4 unrecorded valves were found.

Examination at the Government Printing Office to determine the cause of a drop of pressure, when one of their supply mains was closed, showed the remaining 6-inch feed to be overtaxed, and not obstructed, as was the belief of the authorities at that institution. The investigation of an abnormal consumption at the Bureau of Fisheries resulted in the detection of a decidedly wasteful arrangement of water-consuming machinery. At the close of the year changes suggested by us to remedy this were being made, on the completion of which a saving of 101,000 gallons per day will be in effect. A survey of the mains in the Washington Navy-Yard was conducted and resulted in the finding of considerable underground leakage, but the most important item was the detection of the use of city water for condensing purposes in the electrical power house where river water was available. As this use was in violation of the commandant's orders, the saving there is permanent, as all valves supplying the city water to the condensers have been sealed, and permission has been granted this division to make regular inspections and renewals of the seals. The reduction in consumption at this place was over 2,000,000 gallons per day. An open 3-inch sewer blow-off valve, wasting 737,000 gallons per day, was found and closed as the result of a partial investigation of the mains in the Capitol grounds. As this valve was not recorded, the waste through it would probably have continued indefinitely. Measurements were made in the vicinity of the Soldiers' Home, in connection with pressure tests by the division of tests and experiments, to determine the cause of a recurring drop in pressure. Gauging of the consumption of all federal buildings was started and almost entirely completed.

The unrecorded mains and valves discovered were the result of the careful tracing of all service pipes to their sources of supply. In all cases these mains and valves were located and reported for record. A detailed statement giving the sizes and quantity is included in the summary of the results of the year's work, embodied in this report.

Work done by the photographer embraced the development of pitometer records for this division, and the making of blueprints, copies, and miscellaneous photographs for this and the other branches of the department. The following statement gives the character and quantity of the work accomplished:

Pitometer records developed.....	744
Plates exposed and developed.....	156
Photographic prints made.....	281
Blueprints made	3, 229

Subdivision maps for the entire gravity service were completed and 108 permanent connections were installed, making a total of 235 in the ground at the close of the year. Repairs to connections were made in a number of cases, and where this necessitated the cutting of the street surfacing the 8-inch standpipes previously installed were replaced by valve casings.

The total waste found and prevented amounted to 9,560,635 gallons per day. This figure represents only the leaks radically cured, leaking fixtures and leaks where permanent repairs were impossible not being included. Leaks in this latter class, composed principally of defective house and yard fixtures, were referred to the water registrar's office for disposition, and the amount of waste thereby prevented was undoubtedly large. In this connection it is of interest to note that of 27,758 houses inspected 4,621, or over 16 per cent, were found with defective fixtures.

The total expenditures for the year amounted to \$28,204.67, as follows:

Superintendence and labor.....	\$17,769.09
Transportation, materials, cuts, etc.....	10,435.58
Total.....	28,204.67

This includes the cost of the installation of 103 permanent connections, repairs to equipment, maintenance of photographic division, and the additional card cases necessary to hold the increasing office records.

PITOMETER SURVEYS.

Results for fiscal year ending June 30, 1909.

	Number.	Waste per day.
SUBDIVISION SURVEYS.		
Service pipes and houses inspected.....	27,758	<i>Gallons.</i>
Houses with leaking fixtures.....	4,621	
Leaking service pipes.....	684	4,856,515
Leaking joints on mains.....	118	1,345,620
Broken mains.....	2	117,000
Decayed wooden plugs.....	2	185,000
Cracked valve castings.....	3	8,000
Leaking fire hydrant valves.....	8	45,500
SPECIAL SURVEYS.		
Washington Navy-Yard:		
Condenser feeds using city water.....	4	1,353,500
Leaking services.....	3	257,500
Defective valves.....	1	4,000
Open by-pass valves.....	1	50,000
Shops using city water where river water was available.....	3	350,000
Capitol grounds:		
Open 3-inch blow-off.....	1	737,000
Bureau of Fisheries:		
Wasteful arrangement of machinery.....		101,000
Post-office, Station G:		
Overflowing house tank.....	1	50,000
Total waste detected and prevented.....		9,561,000
Unrecorded—		
	Mains.	Valves.
	<i>Feet.</i>	
6-inch.....	308	2
4-inch.....	159	
3-inch.....	425.9	1
2½-inch.....		1

DIVISION G.—Tests and experiments.

The work of this division is under the direction of Mr. H. D. Yates, from whose report the following extracts are made:

The work of this division consists in testing and correcting the measuring apparatus used by the department; in making calorimetric tests of coal delivered at the pumping station; in making accuracy tests of all water meters to be used in the District of Columbia; in making special tests of boilers and machinery as called for; in figuring the daily pumpage, consumption, station duty, etc., and in keeping necessary records.

The following special tests were made: Determination of the steam consumption of the auxiliary air compressors and the waste-cleaning machine; accuracy tests of hot-water meters and pitometer pump-slip indicators; experiments made with the view of rendering fit for use the mixture of oils and grease removed from the waste-cleaning machine; an investigation of the conditions that cause fluctuating pressures in the water mains in the vicinity of the Soldiers' Home Reservation, as determined by means of recording pressure gauges; station duty trials to secure data for checking the items of record furnished by the assistant engineers; a series of tests to determine the best conditions, as regards furnace management and equalization of work of boilers, for economical efficiency (duty) of the plant.

Miscellaneous tests include the following: Valves tested for leaks, three-fourths to 24 inches, 1,054; corporation cocks, tests for leaks, three-fourths to 2 inch sizes, 4,791; curb cocks, tests for leaks, three-fourths to 1 inch sizes, 3,731; pressure gauges tested and corrected, 186. Also made calibrations of thermometers, hot-water meters, fuel calorimeter, automatic measuring tanks, recording gauges, etc.

Calorimetric tests were made of all the coal delivered at the pumping station during the year. Determinations were made with the Carpenter fuel calorimeter and are shown in the accompanying table.

The tests for accuracy and durability of water meters, begun July 3, 1908, to secure information for the guidance of the department in the selection of meters for local use, are still under way. The points being considered by this investigation are: (1) The relative accuracy of small-sized meters tested under the same conditions of pressure and water delivery with widely varying rates of flow; (2) sensitiveness; (3) loss of head; (4) permanency of registration; (5) capability of meters to be adjusted for wear, and cost of such adjustment.

The sizes and makes of all private and municipal water meters tested during the year are shown in the accompanying table. Meter test records are filed under the card-index system and duplicates are forwarded to the water registrar.

Reports of all special tests and monthly statements showing the pumpage, consumption, mean water pressures, force of draft entering and leaving economizers and at base of stack, steam at boilers, mean temperatures of outer air, boiler room, water in mains, water entering economizers and boilers, gases entering and leaving economizers, vacuum pressures, foot-pounds of work by engines and generators, coal burned, station duties, per cent of CO₂ in flue gases, etc., have been submitted. Reports were also made relative to the performance of water meters on the endurance test; to a proposed color scheme for all piping outside of engine room; to the design of mercury columns for discharge pressures on all pumps; and to a detailed statement, furnished the United States Geological Survey, of our coal records for the year ending August 31, 1908.

The results of experiments made to render fit for use the mixture of oil and grease removed by the waste machine show that about 95 per cent of the oil in this material may be recovered and purified at a labor cost of 6½ cents per gallon. The refined oil is probably worth 30 cents per gallon.

The station duty for the year was 95,600,000 of foot-pounds per 100 pounds of coal burned. This is an increase of 17.7 per cent over the duty obtained during the preceding year, and represents an annual saving of 643 tons (2,240 pounds each) of coal. The highest monthly duty was obtained in June (=100.4) and the lowest in March (=92.6). Comparisons of monthly duties show that the lowest of the year exceeds the highest for the preceding year by 3.1 per cent. These increases in efficiency are partly due to the increased work done by the high-duty pumps and partly to the better condition of the steam-generating equipment, steam piping, etc., and less use of the auxiliary apparatus.

The normal force employed consisted of 2 skilled laborers, 1 plumber, and 1 laborer.

Analyses of "Jenner" bituminous coal delivered during the fiscal year ending June 30, 1909, at the District pumping station, Washington, D. C.

Month.	Dry coal.	
	British thermal units.	Ash.
1908.		
July.....	14,360	Per cent. 7.79
August.....	14,420	8.64
September.....	14,610	6.86
October.....	14,341	8.57
November.....	14,513	8.61
December.....	14,627	8.35

Analyses of "Jenner" bituminous coal delivered during the fiscal year ending June 30, 1909, at the District pumping station, Washington, D. C.—Continued.

Month.	Dry coal.	
	British thermal units.	Ash.
1909.		<i>Per cent.</i>
January.....	14,575	7.72
February.....	14,357	8.38
March.....	14,624	7.20
April.....	14,704	7.03
May.....	14,557	7.24
June.....	14,592	7.08
Average.....	14,523	7.79

Tests of private and municipal water meters (excluding meters on endurance test) during the fiscal year ending June 30, 1909.

Meter.	Size.									Total.
	$\frac{1}{2}$ inch.	$\frac{3}{4}$ inch.	$\frac{1}{2}$ inch.	1 inch.	1 $\frac{1}{2}$ inches.	2 inches.	3 inches.	4 inches.	6 inches.	
American.....		125		2	1					128
Crown.....	1	1	1	3	10	5	4			25
Davis disk.....			2							2
Gem.....						18	5			23
Hersey.....		671	46	5	16	10		2		750
Hersey detector.....							1	5	2	8
Keystone.....		127			5	1				133
King.....		132								132
Lambert.....		132	38	22	28	6	4	2		232
Nash.....	1	142	154	124	56	43	4	7		531
Niagara.....			4	1	2	1				8
Pittsburg disk.....		7	7	21	12	3	5			55
Standard.....		3	9	1	5	3				21
Thomson.....		2	52	43	15	25		3		140
Trident.....		223	1	2	7	1	2	4		240
Union.....			23	5	3	10				41
Worthington.....		61	1	1	4	5	3			75
Total.....	2	1,626	338	230	164	131	28	23	2	2,544

Analyses of "Jenner" bituminous coal delivered during the fiscal year ending June 30, 1909, at the District pumping station, Washington, D. C.

Month.	Heat units per pound dry coal.	British thermal units per pound combustible.	Ash.
1908.			<i>Per cent.</i>
July.....	14,360	15,574	7.79
August.....	14,420	15,782	8.64
September.....	14,610	15,685	6.86
October.....	14,341	15,686	8.57
November.....	14,513	15,880	8.61
December.....	14,626	15,957	8.35
1909.			
January.....	14,575	15,795	7.72
February.....	14,357	15,670	8.38
March.....	14,624	15,758	7.20
April.....	14,704	15,814	7.03
May.....	14,557	15,694	7.24
June.....	14,592	15,703	7.08
Mean.....	14,523	15,750	7.79

Samples of coal were taken from each wagonload as delivered. These were combined for monthly periods, and the sample tested obtained by the process of quartering down.

Determinations were made with the Carpenter fuel calorimeter.

Cost of operating pumping engines at the District pumping station during the year ending June 30, 1909.

Operating expenses:	
Coal (includes coal for shops, excludes heating system).....	\$12,599.26
Salaries of steam engineers, firemen, oilers, etc.....	17,878.75
Supplies, oil, waste, grease, packing, etc.....	2,110.06
Repairs to engines, pumps, and boilers, including grates.....	436.11
Total cost of operation.....	33,024.18
Total pumpage for the year, without allowance for slip.....gallons..	8,759,862,000
Greatest amount pumped in one day (October 17).....do....	29,434,400
Least amount pumped in one day (February 23).....do....	21,612,000
Average pumped per day.....do....	23,999,622
Average dynamic head against pumps.....feet..	106.43
Duty = $\frac{\text{Gallons pumped} \times 8.34 \times 100 \times \text{dynamic head}}{\text{Total fuel consumed}}$ =	95,601,333
Cost of fuel, pumping 1,000,000 gallons 1 foot high.....cents..	1.35
Total operative cost of pumping 1,000,000 gallons 1 foot high..do....	3.54
Total operative cost per 1,000 gallons.....do....	.377

NOTES.

The above items of supplies and repairs were furnished by the clerical division.

The pumpage is figured on plunger displacement, without allowance for slip. The aggregate slip of all pumps during the year, based on pitometer determinations, is 3.4 per cent of the total plunger displacement.

The average dynamic head is figured from the total work done by pumping engines and generators.

The fuel consumed is the total coal burned excluding the heating system.

The cost of heating—333,116 pounds of coal at \$3.47 per ton—is \$516.03.

DIVISION H.—Pumping station and repair shops.

This division has charge of all pumping incident to the distribution system, care of pumping stations and machinery, and all miscellaneous repair work needed in the department. It is under the direction of Mr. James T. Fink, chief steam engineer, from whose report the following is taken:

Water pumped, from plunger displacement:

First high service.....	gallons..	6,794,773,020
Second high service.....	do....	1,592,827,680
Third high service.....	do....	369,777,150
Total.....	do....	8,757,377,850
Coal burned.....	tons..	3,784.05

The force employed each week for the operation of the engines and boilers, the cleaning of machinery and boilers, handling of ashes, etc., is as follows:

Steam engineers.....	3
Assistant steam engineers.....	3
Firemen.....	3
Oilers.....	4
Cleaners.....	3
Laborers ^a	6

For the fourth high-service system the water is pumped from the reservoir at Fort Reno (supplied by the third high-service pump) to an elevated tank. There are two triplex, single-acting pumps, operated by gas engines of 10 and 6 horsepower, respectively. This machinery is operated daily by the watchman in charge of the reservoir,

^a On Sundays only 1 laborer is employed.

and since May 19, 1909, owing to the increased consumption on this service, it has been necessary to have a man on duty for night service.

Water pumped, figured from plunger displacement:

Fourth high service.....	gallons..	34, 719, 679
Gas consumed during year.....	cubic feet..	321, 400

Under the head "of shopwork" are included the following divisions and the number of men ordinarily required in each during each week, excepting Sundays.

Machinists.....	7
Blacksmith.....	1
Carpenters.....	2
Painters.....	2
Steam fitter.....	1
Laborers.....	7

The work accomplished during the year is as follows:

All necessary repairs for this station, gas engines and pumps at Reno Reservoir, and automobile trucks have been made. Also repair parts for fire plugs and valves used throughout the city, including tools used on the work of laying mains and connections, such as picks, chisels, breakers, calking tools, yarning irons, keys and wrenches, pipe bands, etc. Repaired the following valves:

2-inch.....	3
3-inch.....	10
4-inch.....	36
6-inch.....	68
8-inch.....	6
10-inch.....	2
12-inch.....	10
20-inch.....	1
24-inch.....	3
30-inch.....	3
3-way.....	10
4-way.....	12
Total.....	164

Repaired 628 water meters of various sizes; built 38 three-way valves and 50 four-way valves; made 87 waste valves and 150 operating screws for fire plugs; made 85 screws for valves from 3 to 12 inches; made 12 indicator posts, and put handles in 51 dirt rammers; repaired and made new pipe jointers; made 12 iron forms for concrete rings; built fire-heating furnace; built truck and mounted water motor for centrifugal pump; erected standpipe for water cart and gasoline tank, pump, and cabinet; connected slop sink; put up netting for ivy; made damper; drilled irons and made connection for crematory to breeching, and erected trash hopper; fitted up new blacksmith shop; examined new valves received for interchangeability and made gauges for same; made special taps for fire-plug operating nuts; repaired diaphragm and force pumps; tapped waste connections and fitted up casings and repaired main valves for fire plugs; repaired tapping machines and made slip washers and feed yokes; drilled and tapped pipe bonnets and Buffalo box tops; repaired lawn mowers; cut pipe and nipples for plumbers and storekeeper; put heating coils in greenhouse; made iron doors for manure pit; cut in section Register street hydrant; repaired overflow tops for horse fountains; made knobs for street hydrants; coiler springs for pumps; waste valves on fire plugs and hydrants; repaired engineer's transit; sharpened Smith cutters; cut threads on curb cocks; cut eel guards off of corporation cocks for pitometer division; cut threads on bolts; connected speedometer to auto-trucks; repaired clipping machine for stable; drilled bands and plates and cut threads on rods for anchoring mains, fire plugs, etc.

Blacksmith shop was completed and occupied in November, 1908. The following new tools were made during the year: Chisels, 319; calking irons and yarners, 85; casing hooks, 31; breakers, 148; stakes for barricading ditches, 90; meter-box keys, 28; curb keys, 11, and valve-operating keys, 21; sharpened 2,657 chisels, 7,260 picks, and welded 600 new ends on picks; repaired 17 valve-operating keys and 64 curb keys; made pipe bands and rods; welded collars on main stems for fire plugs; dressed and tempered tools for machine shop; straightened and pointed 170 stakes; made forgings for miscellaneous repair parts as required for use at the station and on outside work.

The carpenters have built cardcases, counters, frames for maps, charts, and signs, drawing boards, lockers, tool boxes of various kinds and sizes, tables, centers, and forms for concrete work; made frames, sash and doors for blacksmith shop and greenhouse; erected greenhouse and workshop; made tool racks and bench for blacksmith shop; made patterns; repaired patterns and boxed patterns; also kept card index of patterns; built bran chute and shelving for stable; put up picture molding and chair rail at District Building; sawed out woodwork for heavy truck wagon and made repairs to wagons and tool boxes; made ladders, plumb rules, and straight edges; built inclosure for stair well at Reno tower; sawed rafters for material bins and erected bins; made and erected shelving in storeroom; repaired watchmen's boxes; turned wood rollers; put springs and checks on doors; repaired locks; eased doors; made window boxes; repaired boats for reservoirs; built platform for pitometer test tables; made box for bale wire; repaired ice chest; made door and window trim and erected woodwork for tool house at Brightwood Reservoir; put vials in levels; and filed saws for storekeeper, etc.

The painters have finished cases, counters, frames, signs, desks, tables, gates for west yard; painted galvanized iron cornice of sheds in west yard and eaves of material bins; painted, lettered, and varnished wagons and buggies; painted blacksmith shop; glazed and painted greenhouse and work shed; painted bridge at Woodridge; filled, painted, and varnished No. 7 engine; cleaned and refinished pumps of engines Nos. 3, 4, 5, and 6; painted dark room, lockers, transit rods, indicator posts and caps, watchmen's boxes, pitometer boxes, boats and reservoirs, water coolers, cover for exhaust pit, hydraulic ram, davits on smokestack, window boxes and pans, pipe covering, light poles in yard, truck and motor driven pump; painted inside of lodge and new tool house at Brightwood Reservoir; harness room in stable; cleaned and painted office rooms in station and cleaned cement walls of gatehouses at Brightwood Reservoir; painted ironwork of crematory and trash hopper and tire-heating furnace; painted horse fountains and reglazed sash and touched up work in station.

Under the heading "Care of station, lights, etc.," are included the electrician, janitor, and helpers. The following schedule shows the number of men ordinarily employed each day during the week:

Electrician.....	1
Helper.....	1
Janitor.....	1
Laborers ^a	10
Window cleaner ^a	1

The electrician and helper have taken care of the generators, switchboards, motors, wires for lights, telephones, call bells, etc.; operated conveyor for coal and ash, economizer scrapers, crane, etc.; put up conduit wires and lights in stable, loft, and wagon sheds; changed conduit and light in tower at Reno and put up extension bell; repaired telephones at U street stable and at station; put in conduit for wires to west yard; made and erected lamp-posts and connected lights; connected lamps on post in stable yard; repaired lamps on blueprinting machine; repaired pyrometer switch and switch on CO₂ recorder; put in conduit and wires for lights and telephone in blacksmith shop and greenhouse; connected arc lamp in dark room; made fixtures for drawing boards; made drop cords for use around station; put lights at measuring tanks in basement; put storage battery on motor truck; tested and charged storage batteries for pitometer division; repaired lubricators; put davits on smokestack; new trolley wire on crane; put lights over pitometer test tables in vault; connected electric blower in smith shop; repaired electric hoists; connected lights, telephone, and call bell in shelter building; soldered joints on wire netting for ivy; repaired spark connections on auto truck; changed rail on conveyor platform; recharged batteries for engines at Reno; repaired electric fans; made drip pans for crane; soldered galvanized-iron pumps, oil cans, paint and varnish buckets; made fastenings for screw caps on 24 oil cans.

The janitor and his force have been engaged in cleaning throughout the building. The large amount and excellent quality of work done during the year are due in very large part to the active and intelligent interest shown by the various employees, to whom I hereby extend my thanks.

Very respectfully, your obedient servant,

W. A. McFARLAND,
Superintendent Water Department.

Capt. WM. KELLY,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner District of Columbia.

^a On Sundays 2 laborers and 1 window cleaner are employed.

TABLE I.—*Statement of cash account of the water department for the year ending June 30, 1909 (data obtained from records in the auditor's office, District of Columbia).*

July 1, 1908.	Balances:		
	Cash to credit of fund in Treasury of the United States.....	\$35, 728. 43	
	Cash in hands of disbursing officer, District of Columbia, account water-department appropriations.....	7, 914. 22	\$43, 642. 56
June 30, 1909.	Cash collections account water fund, through—		
	Collector of taxes, District of Columbia, for year.....	572, 752. 74	
	Cash repayments—		
	Salaries.....	\$61. 67	
	High service.....	1, 117. 32	
	General expenses.....	106. 50	
		1, 285. 49	
	Credits to fund by transfer vouchers from various appropriations and deposits.....	48, 590. 10	622, 628. 33
			<u>666, 270. 89</u>
June 30, 1909.	Expenditures:		
	Water department, District of Columbia, 1907, contingent expenses.....	3. 00	
	Water department, District of Columbia, 1908—		
	Salaries.....	\$42. 50	
	High service.....	3. 50	
	Contingent expenses.....	114. 51	
	General expenses.....	1, 680. 27	
		1, 840. 78	
	Water department, District of Columbia, 1909—		
	Salaries.....	\$76, 617. 37	
	Contingent expenses.....	3, 325. 80	
	High service.....	442, 871. 97	
	Refunds account water rents (duplicate payments, etc.).....	1, 076. 78	
	General expenses.....	36, 856. 63	
		560, 748. 55	
	Reimbursement of District of Columbia and United States revenues account, appropriation water meters, District of Columbia, installment.....	20, 000. 00	582, 592. 33
	Balance:		
	Cash to credit of water fund in Treasury of the United States.....	73, 859. 95	
	Cash in hands of disbursing officer, District of Columbia, account water department appropriations.....	9, 818. 61	83, 678. 56
			<u>666, 270. 89</u>
Liabilities of water fund, District of Columbia, account of water-department appropriations, as shown by appropriation ledgers, June 30, 1909:			
	Water department, District of Columbia, 1909—		
	Unexpended balances of appropriations—		
	Salaries.....	\$4, 638. 82	
	Contingent expenses.....	174. 20	
	General expenses.....	5, 146. 87	
			9, 959. 89
	Water department, District of Columbia, 1908—		
	Unexpended balances of appropriations—		
	Salaries.....	5, 008. 94	
	Contingent expenses.....	22. 10	
	General expenses.....	540. 66	
			5, 571. 70
	Amount available for high service and indefinite charges, refunds, etc....		68, 146. 97
	Amount available.....		<u>83, 678. 56</u>

TABLE II.—Statement of operating expenses in detail of the water department for the year ending June 30, 1909.

Hheads of expenditures.	Per diem labor and salaries.	Expended for material.	Total expenditures.	Charged to general account of—			Credit for hauling, charged to the work.
				Operating.	Repairs.	New work.	
Superintendence.....	\$11,052.47	\$1,427.97	\$12,480.44	\$3,488.59	\$2,891.85	\$6,100.00	.....
Engineering.....	9,658.26	1,900.98	11,559.24	2,412.58	2,891.85	6,254.81	.....
Water mains laid.....	35,337.22	80,164.75	115,701.97	.....	.....	115,701.97	.....
New public hydrants and fountains.....	35,337.22	313.20	35,650.42	.....	.....	35,650.42	.....
New buildings.....	9,912.01	32,016.50	32,928.51	.....	.....	32,928.51	.....
Grounds, roads, and wall inclosures.....	6,421.97	8,140.70	14,561.97	.....	.....	14,561.97	.....
Deposit and railroad work (repaid to the department).....	23,040.59	28,751.06	52,391.65	.....	.....	52,391.65	.....
Inspection of pipe at foundry.....	810.00	22,637.40	23,447.40	.....	.....	23,447.40	.....
Water meters, installation of.....	4,691.66	3,347.78	8,039.44	4,771.33	1,989.04	4,179.78	.....
Water department shop work.....	9,087.16	1,735.28	10,822.45	10,822.45	16,371.09	7,001.80	.....
Care of property.....	14,583.46	8,789.43	23,372.89	.....	.....	.....	.....
Care and repair of fire hydrants, street hydrants, and fountains.....	13,080.54	13,060.40	26,140.94	.....	.....	.....	.....
Adjusting-valve casings and boxes.....	178.70	329.27	507.97	2,863.64	9,714.30	16,190.00	.....
Leak service.....	16,856.01	10,097.06	26,953.07	.....	708.03	.....	.....
Water department, telephone system.....	3,125.75	34.71	3,160.46	.....	26,953.07	.....	.....
Office of the water registrar.....	51,898.73	7,713.16	59,611.89	.....	.....	.....	.....
Repair of water meters.....	5,833.38	1,739.02	7,572.40	.....	.....	.....	.....
Office of the superintendent, water department.....	9,367.54	1,727.57	11,095.11	.....	.....	5,000.00	.....
Pitometer division (detection of leaks).....	17,769.09	10,530.88	28,299.97	.....	.....	3,186.00	.....
Tests and experiments.....	5,026.66	188.79	5,215.45	.....	.....	.....	.....
Care of pumping station and grounds.....	11,849.86	2,295.93	14,145.79	.....	.....	.....	.....
Operating pumping engines, distributing station.....	22,855.71	20,181.18	43,036.89	.....	.....	.....	.....
Maintenance of reservoirs.....	2,292.18	527.26	2,819.44	.....	.....	.....	.....
Lowering and raising water mains.....	2,055.45	505.23	2,560.68	.....	2,620.68	.....	.....
Office furniture and fixtures.....	776.02	208.22	984.24	.....	.....	.....	.....
Water department, stables and hauling account.....	31,715.93	14,227.11	45,943.04	.....	.....	.....	.....
Miscellaneous expenditures—freight, rent of telephones, advertising, telegrams, etc.....	.....	2,923.86	2,923.86	.....	.....	.....	\$38,572.52
Disbursements for services of employees not under the supervision of the water department.....	.....	.....	.....	2,923.86	.....	.....	.....
Office of the Engineer Commissioner.....	3,150.00	.....	3,150.00	.....	.....	.....	.....
Office of the assessor, District of Columbia.....	3,536.00	.....	3,536.00	3,150.00	.....	.....	.....
Office of the property clerk.....	197.31	.....	197.31	.....	.....	.....	.....
Office of the disbursing officer.....	341.25	.....	341.25	.....	.....	.....	.....
Total.....	335,732.20	298,884.71	634,616.91	209,716.17	64,139.91	292,188.31	38,572.52
Less credit for hauling, charged to work.....	31,715.93	6,836.59	38,552.52	.....	.....	.....	38,572.52
Net charges.....	304,016.27	292,028.12	596,044.39	209,716.17	64,139.91	292,188.31	.....

Pay rolls.....	\$335,732.20
Material used and expended, including transportation and cuts to improved pavements.....	208,884.71
Less credit for hauling account.....	<u>\$64,616.91</u>
	38,572.32
Total net expenditures.....	543,041.39
Expenditures for the year ending June 30, 1908.....	<u>561,015.05</u>
Excess for the year ending June 30, 1909.....	5,023.34

TABLE III.—Summary of the distribution system, including mains laid by the United States, the District of Columbia, and on account of deposit work.

	In service June 30, 1908.	Added dur- ing fiscal year 1909.	Abandoned during fiscal year 1909.	In service June 30, 1909.
75-inch diameter.....linear feet..	600			600
48-inch diameter.....do.....	44,297	162	148	44,311
42-inch diameter.....do.....	23			23
36-inch diameter.....do.....	58,953	263	272	58,944
30-inch diameter.....do.....	49,010	43	201	48,852
24-inch diameter.....do.....	21,412	88	154	21,346
20-inch diameter.....do.....	47,532	21	16	47,537
16-inch diameter.....do.....	2,580			2,580
12-inch diameter.....do.....	256,577	11,863	6,139	262,301
10-inch diameter.....do.....	9,044	81	99	9,026
Total trunk lines.....do.....	490,028	12,521	7,029	495,520
8-inch diameter.....do.....	238,877	72,687	406	311,158
6-inch diameter.....do.....	1,475,332	7,801	13,662	1,469,471
4-inch diameter.....do.....	140,104	2,198	2,664	139,638
3-inch diameter.....do.....	73,179	1,589	1,183	73,585
24-inch diameter.....do.....	242			242
2-inch diameter.....do.....	6,229		1,560	4,669
1½-inch diameter.....do.....	3,870			3,870
1¼-inch diameter.....do.....	2,001			2,001
Grand total.....do.....	2,429,862	96,796	26,504	2,500,154
Stop valves.....	5,902	773	326	6,349
Fire hydrants.....	2,422	257	137	2,542
Public hydrants.....	257	34	50	241
Public fountains.....	124	7	3	128
Water mains lowered.....linear feet..				3,831

TABLE IV.—Statement showing cost of water mains laid during the fiscal year ending June 30, 1909.

Location.	Size.	Length.	Labor.	Material.	Total.
	<i>In.</i>	<i>Feet.</i>			
Alley, square 355.....	3	163.28	\$57.93	\$104.76	\$162.69
Alley, square 3070.....	3	83.53	55.06	100.72	155.78
Alley, square 273.....	3	220.47	58.75	142.62	201.37
Alley, square 182.....	3	199.50	78.37	191.52	269.89
Alley, square 503.....	3	80.80	49.19	65.27	114.46
Alley, square 551.....	3	171.37	47.13	169.00	216.13
Alley, square 17.....	4	157.38	67.31	204.25	271.56
Alley, square 545.....	4	161.46	70.31	187.61	257.92
Alley, square 68.....	4	118.80	56.50	107.06	163.56
Alley, square 70.....	4	237.59	116.62	139.52	256.14
Alley, square 988.....	4	188.56	91.50	194.18	285.68
Alley, square 2558.....	4	210.24	60.50	247.13	307.63
Alley, square 1060.....	4	94.00	34.56	38.23	72.79
Alley, square 175.....	4	112.75	45.38	55.50	100.88
K street sw., west from One-half street.....	6	75.18	63.81	63.32	127.13
G street nw., between Twenty-sixth and Twenty-seventh streets.....	6	169.10	130.81	147.88	278.69
Rhode Island avenue nw., west from North Capitol street.....	6	342.24	89.69	197.89	287.58
Eighteenth street ne., between East Capitol and B streets.....	8	851.64	274.02	647.36	921.38
K street se., between First street and New Jersey avenue.....	3	45.06	173.01	346.20	519.21
	4	244.51			
Meigs place ne., east from Sixteenth street.....	8	4.37	83.75	194.26	278.01
Seventeenth street se., between Harrison and T streets.....	8	122.58			
Taylor street se., between Jackson and Washington streets.....	8	32.75	12.42	55.41	67.83
	6	3.75			
	8	316.85	111.50	306.18	417.68
Twelfth street ne., north from C street.....	4	4.32			
	8	283.16	140.22	340.75	480.97
Thirty-fourth street nw., south from M street; alley, square 1184, Georgetown.....	4	140.34			
	6	8.72	140.12	356.02	496.14
	8	104.89			
I street ne., west from Fifth street.....	4	4.97			
	8	185.89	80.81	291.96	372.77
Nichols avenue se., south from Howard avenue.....	6	8.64			
	8	1,647.79	611.19	2,270.27	2,881.46

TABLE IV.—Statement showing cost of water mains laid during the fiscal year ending June 30, 1909—Continued.

Location.	Size.	Length.	Labor.	Material.	Total.
	<i>In.</i>	<i>Feet.</i>			
Twenty-third street nw., north from Calvert street....	8	525.13	\$242.83	\$596.63	\$839.46
Twelfth street ne., between Franklin and Hamlin streets; Girard street ne., east from Twelfth street....	12	10.51			
	6	6.90			
S street nw., west from Thirty-fifth street.....	8	743.01	149.19	860.32	1,009.51
	4	2.60	121.81	355.94	477.75
	8	354.45			
Delafield place nw., between Iowa and Georgia avenues; Iowa avenue nw., between Delafield place and Decatur street.....	8	2,042.73	442.93	1,583.93	2,026.86
New Hampshire avenue nw., north from Georgia avenue.....	4	5.12	115.06	280.39	395.45
	6	9.69			
	8	234.65			
Butternut street nw., between Fifth and Sixth streets.	4	2.27	95.31	223.12	318.43
	6	14.61			
	8	111.00			
Sixteenth street se., between Harrison and T streets; T street se., east from Sixteenth street.....	6	7.43	149.11	540.21	689.32
Northampton street nw., between Belt road and Thirty-ninth street; Thirty-ninth street nw., south from Northampton street.....	8	471.82	122.38	413.78	536.16
	4	2.65			
Lawrence street ne., between Thirteenth and Fourteenth streets.....	8	329.62	107.92	191.93	299.85
	4	5.54			
	8	171.55			
Chicago street se., south from Shannon place; Shannon place se., between Chicago and Franklin streets....	4	4.82	107.13	439.51	546.64
Girard street ne., between Thirteenth and Fourteenth streets.....	8	366.08	111.56	483.21	594.77
	4	3.97			
	8	384.92			
Kalorama road nw., between Champlain avenue and Eighteenth street.....	6	4.94	115.13	305.83	420.96
Nichols avenue se., south from Sumner avenue.....	8	236.54	379.32	1,017.91	1,397.23
Randolph Place ne., between North Capitol street and Lincoln avenue.....	8	1,176.30			
	6	9.70			
Fourth street ne., between Florida avenue and M street	8	163.45	91.12	179.10	270.22
	8	503.05	170.30	397.47	567.77
Livingston street nw., east from Connecticut avenue..	4	5.14	159.37	361.84	521.21
	6	4.34			
	8	239.71			
U street se., between Sixteenth and Fendall streets....	4	2.93	31.41	87.20	118.61
	8	65.11			
Twenty-third street nw., between T street and Wyoming avenue; Wyoming avenue nw., east from Twenty-third street.....	4	2.65	238.69	666.73	905.42
	8	546.97			
New Hampshire avenue nw., north from Park road; Newton place nw., east from New Hampshire avenue	4	2.45	209.24	561.61	770.85
Channing street nw., west from North Capitol street..	8	645.66	120.40	500.71	621.11
Oak street nw., between Fourteenth street and Holmead place.....	8	472.59			
	6	9.93			
Girard street nw., west from Eleventh street.....	8	524.13	246.29	520.77	767.06
N street ne., east from First street.....	8	297.48	104.86	245.36	350.22
North Carolina avenue ne., between Fourteenth and B streets; B street ne., between North Carolina avenue and Fifteenth street.....	8	537.88	252.00	769.89	1,021.89
	6	9.59	224.79	440.08	664.87
	8	539.80			
Kalorama road nw., west from Twentieth street.....	4	2.94	102.69	378.79	481.48
	6	4.35			
	8	263.37			
Rhode Island avenue ne., east from Lincoln avenue..	8	196.73	39.63	201.51	241.14
Fifth street ne., north from F street.....	4	2.27	120.63	232.47	353.10
	8	308.87			
Meridian street nw., between Holmead place and Fourteenth street.....	6	2.90	212.68	488.29	700.97
Phelps place nw., west from Florida avenue.....	8	498.85	62.25	215.55	277.80
	4	2.77			
	8	148.45			
Newton place nw., west from Warder street.....	8	460.00	203.44	357.68	561.12
Fifth street nw., between Elm street and Oakdale place	8	223.83	118.97	235.85	354.82
West side Truxton circle nw., from Florida avenue to North Capitol street.....	6	3.60	183.23	480.84	664.07
	8	245.81			
	4	5.72			
Florida avenue nw., between Eighth street and New Jersey avenue.....	6	122.61	1,406.82	3,617.44	5,024.26
	8	2,957.14			
	12	8.02			
Allison street nw., between Ninth street and Georgia avenue.....	8	309.35	93.56	290.73	384.29
Sherman avenue nw., north from Fairmont street; Fairmont street nw., west from Sherman avenue....	4	3.36	126.62	403.67	530.29
	6	3.01			
	8	313.69			
Brentwood road ne., east from Central avenue.....	4	2.87	114.62	246.85	361.47
	8	349.23			
	4	3.55			
L street sw., west from South Capitol street.....	8	165.92	66.18	143.98	210.16
Georgia avenue nw., between Crittenden and Emerson streets; Crittenden street nw., west from Georgia avenue; Iowa avenue nw., north from Emerson street; Fourteenth street nw., north from Iowa avenue.....	4	2.77	614.14	2,025.99	2,640.13
	8	1,084.34			
	12	937.74			

TABLE IV.—Statement showing cost of water mains laid during the fiscal year ending June 30, 1909—Continued.

Location.	Size.	Length.	Labor.	Material.	Total.
	<i>In.</i>	<i>Feet.</i>			
Fifteenth street nw., north from Belmont street.	4	2.72	\$127.06	\$252.14	\$379.20
	8	185.47			
Quincy street nw., between Cedar road and Fourteenth street.	8	162.45	79.94	117.08	197.02
Adams street nw., east from Second street.	8	81.17	31.87	115.35	147.22
Twentieth street ne., between Rhode Island avenue and Jackson street.	8	432.15	90.75	320.77	411.52
Fifteenth street se., between U street and Good Hope road.	6	5.17	53.17	96.51	149.68
	8	102.83			
Carlton avenue ne., east from South Dakota avenue.	4	3.52	122.62	245.48	368.10
	8	262.24			
B street ne., west from Sixteenth street; Sixteenth street ne., south from B street.	8	426.90	203.19	394.30	597.49
Connecticut avenue nw., south from Calvert street.	4	3.44	137.75	311.88	449.63
	8	232.64			
	12	3.43			
Schneider's lane nw., between Thirty-seventh street and Tunlaw road; Tunlaw road north from Schneider's lane.	4	5.17	236.50	665.90	902.40
	8	801.36			
Nineteenth street nw., south from U street.	8	145.31	55.87	124.18	180.05
A street ne., between Fifteenth and Sixteenth streets.	8	365.68	144.62	241.91	386.53
Fourteenth street nw., between Newton and Meridian streets.	8	252.84	121.06	234.58	355.64
North Capitol street nw., between Quincy and R streets.	4	4.12	65.12	140.05	205.17
	8	5.65			
	8	104.61			
K street nw., between Twentieth and Twenty-first streets.	8	79.53	74.56	78.12	152.68
Otis place nw., between Holmead place and Thirtieth street.	8	325.24	115.06	295.03	410.
Channing street nw., between North Capitol and First streets.	4	4.00	220.19	286.18	506.37
	8	395.70			
School street nw., between Irving and Lamont streets.	6	8.73	109.94	238.19	348.13
	8	296.35			
North Carolina avenue ne., between Thirteenth and A streets; Thirteenth street ne., intersection North Carolina avenue; A street ne., east of North Carolina avenue.	8	489.60	183.94	470.64	654.5
Rittenhouse street nw., east from Fifth street.	8	398.26	124.25	332.09	456.34
Kramer street ne., between Sixteenth and Seventeenth streets.	8	274.99	104.06	201.94	306.00
A street ne., between Fourteenth and Fifteenth streets.	6	17.64	207.25	360.40	567.6
	8	495.97			
Genesee avenue nw., east from Eighteenth street.	6	7.01	175.06	226.80	401.86
	8	208.05			
Sixteenth street nw., west from Lamont street.	6	9.35	191.26	407.70	598.9
	8	347.90			
Q street se., between Naylor road and Twenty-second street; Twenty-second street se., between Q and R streets; R street se., between Twenty-second and Twenty-third streets; Twenty-third street se., between R street and Naylor road.	4	4.73	463.36	1,287.99	1,751.35
	8	1,311.77			
Bryant street nw., between First and North Capitol streets.	8	454.00	130.38	362.83	493.21
Butternut street nw., west from Sixth street.	8	96.82	75.25	104.58	179.83
L street nw., between Eighteenth and Nineteenth streets.	6	39.01	393.37	702.64	1,096.01
	8	560.70			
Benning road ne., between Twentieth and Twenty-second streets.	8	186.20	100.98	209.28	310.26
Lincoln avenue ne., between U street and Rhode Island avenue.	8	276.80	109.44	220.31	329.75
Sixteenth street se., between Good Hope road and U street.	6	3.40	97.43	275.26	372.69
	8	323.65			
Sixteenth street se., north from W street.	8	162.40	55.63	111.29	166.92
Sixteenth street se., between T street and Minnesota avenue.	8	180.80	66.31	127.29	193.60
Maryland avenue ne., west from Twelfth street.	6	12.17	102.50	133.65	236.15
	8	117.40			
Ontario road nw., north from Kalorama road.	8	53.02	30.00	61.34	91.34
Twelfth street ne., between Quincy and Randolph streets; Randolph street ne., east from Twelfth street.	6	4.35	240.51	573.66	814.17
	8	577.97			
Bryant street nw., between First and Second streets.	8	387.27	133.75	324.50	458.25
Jefferson street nw., east from Illinois avenue.	8	151.65	76.06	157.05	233.11
Twenty-seventh place nw., between Garfield street and Cathedral avenue.	8	683.55	315.00	588.19	903.19
Twenty-fifth street se., between Q and R streets.	8	481.34	132.04	434.21	566.25
Cathedral avenue nw., between Connecticut avenue and Woodley road.	8	1,313.88	495.68	1,077.39	1,573.07
Wisconsin avenue nw., between Belt road and Chesapeake street; Chesapeake street nw., between Wisconsin avenue and Forty-second street.	8	738.13	298.08	655.94	954.02

TABLE IV.—Statement showing cost of water mains laid during the fiscal year ending June 30, 1909—Continued.

Location.	Size.	Length.	Labor.	Material.	Total.
Mills avenue ne., between Franklin street and Rhode Island avenue.....	In. 8	Feet. 1,700.67	\$508.19	\$1,275.47	\$1,883.66
Rhode Island avenue ne., between Fourth and Fifth streets.....	6	7.98	92.67	311.97	404.64
Oakdale place nw., east from Fifth street.....	8	294.22			
Nineteenth street nw., between Kalorama avenue and Woodley road.....	8	111.17	69.06	136.89	205.95
U street se., east and west of intersection of Fendall street.....	8	55.27	37.74	59.68	97.42
Georgia avenue nw., between Webster and Allison streets.....	8	211.32	88.00	151.58	239.58
Hamlin street ne., between Twentieth and Twenty-second streets.....	8	458.39			
Decatur street nw., between Georgia avenue and Fourteenth street.....	12	8.42	194.62	384.45	579.07
Rock Creek Church road nw., east from Seventh street; Quincy street nw., east from Seventh street.....	8	423.43	152.38	422.79	575.17
Eleventh street nw., between Harvard street and Columbia road.....	8	1,649.20	516.87	1,265.72	1,782.59
Thirteenth street nw., between Crittenden and Decatur streets.....	6	18.71			
Kearney street ne., west from Twenty-second street.....	8	659.00	265.74	460.01	725.75
Fourteenth street nw., south from Webster street; Webster street nw., west from Fourteenth street.....	6	15.52			
Kansas avenue nw., between Allison and Webster streets.....	8	182.08	124.75	238.54	363.29
Fourteenth street nw., between Meridian place and Oak street.....	8	438.34	225.56	292.95	518.51
Spring road nw., between Holmead place and Fourteenth street.....	4	3.01			
Sixteenth street se., between E and G street.....	8	364.14	146.06	282.22	428.28
Sixteenth street se., south from C street.....	6	15.43			
Macomb street nw., east of Connecticut avenue.....	8	731.17	555.00	1,091.91	1,646.91
Ellicott street nw., between Belt road and Thirtieth street.....	12	444.29			
Georgia avenue nw., between Randolph and Shepherd streets.....	4	3.30			
Forty-first street nw., between Ellicott and Fessenden streets; Fessenden street nw., between Wisconsin avenue and Belt road.....	8	324.79	92.25	259.79	352.04
Randolph place ne., between Twelfth and Thirteenth streets.....	8	197.72	83.76	204.08	287.84
Ninth street nw., north from Allison street.....	8	572.10	162.14	446.13	608.27
Shannon place se., east and west of Talbert street.....	8	479.60	140.57	263.19	403.76
Kenyon street nw., east from Thirteenth street.....	8	241.93	110.37	185.63	296.00
Twenty-eighth place nw., south from Cathedral avenue.....	8	92.88	26.07	73.25	99.32
Carlton avenue ne., east from South Dakota avenue.....	8	426.76	166.37	328.23	494.60
G street sw., west from South Capitol street.....	6	3.30			
Twenty-second street ne., between Evarts and Franklin streets.....	8	249.41	113.70	316.52	430.22
Seventeenth street se., south from T street.....	8	1,303.36	259.13	1,030.24	1,289.37
Shepherd street nw., west from Georgia avenue.....	4	3.10			
Chesapeake street nw., west from Forty-second street.....	8	151.43	54.75	112.33	167.08
Wisconsin avenue nw., north from Chesapeake street.....	4	2.80			
Columbia road nw., east of Georgia avenue.....	8	218.12	160.88	258.49	419.37
W street se., east of Sixteenth street.....	4	3.53			
Hamlin street ne., west from Twentieth street.....	8	288.15	111.13	198.82	309.95
Eighteenth street ne., between Jackson and Kearney streets.....	4	3.10			
T street se., between Sixteenth and Seventeenth streets.....	8	274.08	92.08	214.24	306.32
A street se., between Thirteenth and Fourteenth streets.....	4	3.10			
K street se., west from Fifteenth street; Fifteenth street se., between K and Water streets.....	8	260.11	130.37	219.34	349.71
Eleventh street nw., between Clifton and Euclid streets.....	8	145.50	30.18	107.54	137.72
Fifth street ne., south from G street.....	8	203.91	103.95	229.82	333.77
V street ne., between North Capitol street and Lincoln avenue.....	8	190.99	114.06	162.88	276.94
	8	55.95	25.68	99.75	125.43
	4	4.62			
	6	6.90	45.00	80.99	125.99
	8	68.30			
	8	351.33	61.92	246.31	308.23
	8	235.32	55.87	198.20	254.07
	4	3.27			
	8	43.75	23.94	43.08	67.02
	4	3.10			
	8	56.25	21.93	55.26	77.19
	4	4.82			
	8	527.42	210.83	499.33	710.16
	8	402.10	136.86	237.97	374.83
	4	3.25			
	8	91.93	48.69	100.11	148.80
	8	363.72	107.43	213.50	320.93
	4	3.10			
	8	640.02	230.06	586.81	816.87
	6	7.49			
	8	494.06	282.56	482.51	765.07
	8	349.20	136.82	243.16	379.98
	4	3.10			
	8	141.95	56.19	118.03	174.22

TABLE IV.—Statement showing cost of water mains laid during the fiscal year ending June 30, 1909—Continued.

Location.	Size.	Length.	Labor.	Material.	Total.
Nineteenth street nw., between Lamont street and Park road.....	In. 8	Feet. 496.23	\$232.69	\$531.22	\$763.91
Irving street nw., west from Georgia avenue.....	4	3.10	78.75	198.83	277.58
Keefer street nw., between Georgia avenue and Sixth street.....	8	167.93			
Connecticut avenue nw., north of Wyoming avenue..	6	12.69	126.81	406.11	532.92
Benning road ne., east from Twentieth street.....	8	603.77	60.12	92.68	152.80
	8	116.43			
	8	10.54	116.63	416.83	533.46
	12	244.77			
	4	3.40			
Seventeenth street nw., between I and L streets.....	6	314.96	1,074.25	3,119.68	4,193.93
	8	24.04			
	12	990.51			
	20	2.15			
Iowa avenue nw., between Delafield place and Emerson street.....	12	316.82	105.26	328.20	433.46
Chesapeake street nw., east from Belt road.....	8	10.75	118.94	370.90	489.84
	12	166.11			
Cathedral avenue nw., between Connecticut avenue and Twenty-eighth street.....	8	25.84	314.56	725.20	1,039.76
	12	548.93			
Wisconsin avenue nw., north from Fessenden street..	8	34.04	76.00	474.60	550.60
	12	316.61			
Water street nw., west from Thirty-third street.....	4	6.28			
	8	30.93	949.45	2,036.97	2,986.42
	12	1,256.44			
Georgia avenue nw., between Crittenden and Allison streets.....	8	2.56	326.21	989.45	1,315.66
	12	829.39			
	3	45.15			
	4	18.45			
	6	1,066.10			
	8	551.08			
Connections and blow-offs in various sections.....	10	4.17	3,910.19	6,364.97	10,275.16
	12	315.97			
	20	13.61			
	24	35.42			
	30	9.78			
Fire hydrants erected in new locations.....	6	640.69	1,552.72	4,936.33	6,493.85
	8	219.24			
Unfinished mains June 30, 1908.....			4.25	1,357.67	1,361.92
Unfinished mains June 30, 1909.....			43.00		43.00
Total.....			31,580.40	78,611.95	110,192.35
Superintendence and engineering, 5 per cent on total cost.....			3,956.82	1,552.80	5,509.62
Aggregate cost.....			35,537.22	80,164.75	115,701.97

TABLE V.—Statement of length and cost of water mains laid from July 1, 1878, to June 30, 1909, paid for out of the water department funds.

Fiscal year.	48-inch.	42-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	10-inch.	8-inch.
	Lin.ft.	Lin.ft.	Lin.ft.	Lin.ft.	Lin.ft.	Lin.ft.	Lin.ft.	Lin.ft.	Lin.ft.	Lin.ft.
1878.....										
1879.....										
1880.....								7,409		
1881.....										
1882.....										
1883.....								1,625		26
1884.....								1,038		
1885.....								763		
1886.....								1,938		
1887.....						4,835		1,124	701	
1888.....								731	2,998	
1889.....					2,312	5,140		5,626	2,784	
1890.....										
1891.....								5,201		
1892.....						2,926	2,500	10,165		
1893.....								6,473		
1894.....						278		39,386		
1895.....					6,617			27,731		
1896.....					294	8,874		11,873		
1897.....						2,180		6,877		
1898.....								7,698		907

TABLE V.—Statement of length and cost of water mains laid from July 1, 1878, to June 30, 1909, paid for out of the water department funds—Continued.

Fiscal year.	47-inch.	42-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	10-inch.	8-inch.
	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.
1879.....										
1900.....			10,902		35	1,282	48	167		
1901.....								10,025		
1902.....				1,227		203		14,010		
1903.....	2,123		14,601			35		9,411		
1904.....	4,019	23	5,231	6,332	18	8,608	24	13,802	68	40,767
1905.....			2,701	9	42			1,014		31,750
1906.....	8,155		97		40	716		3,985		34,880
1907.....			2,697	3,650	4		48	12,066	6	55,798
1908.....				20	10	98		5,513		50,428
1909.....				13	35	11		6,478	4	57,010
Total.....	14,297	23	36,269	11,251	9,407	37,160	2,620	218,057	6,651	271,566

Fiscal year.	6-inch.	4-inch.	3-inch.	2½-inch.	2-inch.	1½-inch.	1¼-inch.	Total.	Total cost.
	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	
1878.....	12,781	30						16,570	\$14,846.20
1879.....	8,516	1,397						17,322	19,436.08
1880.....	3,024							3,024	
1881.....	3,709							3,709	3,110.70
1882.....	1,920							1,920	1,626.43
1883.....	4,084							5,735	8,073.70
1884.....	8,972							10,010	10,492.51
1885.....	27,766	358	485					29,372	25,865.35
1886.....	35,192		6,623					44,544	40,025.10
1887.....	30,041	292	7,124					46,414	56,951.00
1888.....	9,123	9,148	3,937					22,930	17,626.63
1889.....	36,742	6,571	8,753					67,928	79,342.16
1890.....	34,737	2,856	2,855					40,448	19,113.54
1891.....	56,833	3,142	11,013					76,249	49,702.65
1892.....	88,709	3,342	1,286					108,926	74,733.04
1893.....	54,173	8,336	3,458					72,440	56,339.39
1894.....	86,632	12,832	2,918					142,046	126,599.55
1895.....	103,785	5,442	2,733					146,308	134,502.31
1896.....	61,464	1,738	3,262					87,505	89,395.12
1897.....	71,266	10,595	992			2,104		94,014	77,954.81
1898.....	52,371	6,735	2,790		1,633	500		72,634	48,661.70
1899.....	84,291	4,662	2,701		79	133		96,000	65,774.52
1900.....	53,838	4,211	2,116		17	433		73,059	114,784.72
1901.....	52,018	2,187	935			646		65,812	47,426.71
1902.....	35,481	1,414	1,632	242				54,209	57,676.33
1903.....	32,264	2,004	357				1,045	61,840	98,498.90
1904.....	2,913	1,745	1,637		1,397			86,644	404,294.81
1905.....	1,228	578	2,671					39,993	73,402.12
1906.....	551	781	722				976	50,903	176,297.98
1907.....	2,209	3,081	869		580			81,008	197,066.91
1908.....	3,279	3,089	1,016		424			63,877	114,411.42
1909.....	4,283	1,692	1,029					70,555	115,701.97
Total.....	1,064,255	98,258	73,914	242	4,130	3,836	2,021	1,853,957	2,419,734.31

TABLE VI.—Average cost per foot for laying water mains of various sizes (including repairs to improved pavements) during the year ending June 30, 1909.

	Linear feet.	Cost for labor per linear foot.	Cost for material per linear foot.	Cost for repairs to pavements per linear foot.	Total cost.
3-inch.....	919	\$0.377	\$0.401	\$0.441	\$1.219
4-inch.....	1,281	.423	.588	.328	1.339
6-inch.....	586	.485	.601	.097	1.183
8-inch.....	58,220	.386	.910	.037	1.333
12-inch.....	5,135	.600	1.480	.167	2.247

TABLE VII.—Statement of the length and cost of water mains laid for the extension of the high-service system of water distribution from July 1, 1893, to June 30, 1909.

	Laid to June 30, 1908.	Laid during the fiscal year 1909.	Total in service June 30, 1909.
1½-inch.....linear feet.....	2,021	.....	2,021
1½-inch.....do.....	2,717	.....	2,717
2-inch.....do.....	2,099	.....	2,099
3-inch.....do.....	7,241	1,029	8,270
4-inch.....do.....	14,793	1,662	16,485
6-inch.....do.....	222,237	4,283	226,520
8-inch.....do.....	182,911	57,010	239,921
10-inch.....do.....	74	4	78
12-inch.....do.....	140,393	6,478	146,871
16-inch.....do.....	120	.....	120
20-inch.....do.....	24,249	11	24,260
24-inch.....do.....	7,061	35	7,096
30-inch.....do.....	11,238	13	11,251
36-inch.....do.....	36,229	.....	36,229
42-inch.....do.....	23	.....	23
48-inch.....do.....	14,297	.....	14,297
Total.....	607,703	70,555	738,258
Total cost to June 30, 1908.....			\$1,457,908.45
Total cost for the fiscal year ending June 30, 1909.....			115,701.97
Aggregate cost to June 30, 1909.....			1,573,670.42

TABLE VIII.—Statement of the number of wells in use during the year ending June 30, 1909.

	Shallow wells.	Deep wells.	Total.
In service June 30, 1908.....	11	31	42
Closed and discontinued during the year ending June 30, 1909.....	.....	1	1
Total in service June 30, 1909.....	11	30	41

REPORT OF THE WATER REGISTRAR.

WASHINGTON, October 7, 1909.

SIR: I have the honor to submit the annual report of the revenue and inspection branch of the water department, showing in detail the work accomplished during the fiscal year ended June 30, 1909:

OFFICE WORK.

Accounts audited.....	94,823
Accounts posted and checked.....	97,102
Accounts examined for fractional charges.....	44,522
Authority cards verified and filed.....	3,060
Cards indexed.....	2,022
Cash receipts posted.....	\$572,752.74
Cards cancelled.....	1,012
Checking bills on agents' lists.....	25,324
Classification of premises for water-rent charges.....	14,280
Change of house numbers on records.....	1,621
Compiling real estate lists.....	3,412
Coupons assorted and filed.....	167,996
Curb cock and box locations recorded.....	2,615
Curb cocks issued.....	2,441
Cut-off orders made and recorded.....	1,289
Cut-off and turn-on orders filed.....	2,884
Delinquent water-rent notices made and compared.....	11,011
Delinquent water-rent lists made and checked.....	182
Drawings, plats, etc., made.....	640

Emergency examinations made in the field.....	2, 123
Examinations for records of private services.....	112
Examinations of service pipes recorded.....	2, 652
Files endorsed and returned.....	272
Files received and abstracts made.....	349
Files indexed.....	299
House-to-house examinations recorded.....	36, 119
House-to-house examination reports checked.....	516
House-to-house leaks found and recorded.....	6, 155
House-to-house, premises in which leaks were found.....	5, 362
Index cards made and checked.....	9, 512
(Transfer from old to new system.)	
Letters and cards received.....	3, 280
Letters and cards sent out.....	8, 591
Letters, etc., copied.....	8, 764
Letters, etc., indexed.....	8, 764
Letters filed.....	3, 280
Lists made and compared.....	3, 412
Lists indexed (agents' requests for bills).....	1, 663
Meter accounts opened, new.....	1, 911
Meter bills made and checked.....	16, 852
Meter accounts computed.....	85, 844
Meter account cards made, new.....	14, 283
(Transfer from old to new system.)	
Meter computations checked.....	45, 789
Meter cards checked.....	253
Meters, changes on records recorded.....	411
Meter installation cards made.....	1, 546
Meter tests received and recorded.....	2, 028
Meters ordered out for test, etc.....	625
Meters ordered repaired.....	605
Meter locations plotted on cards and checked.....	401
Meter reading cards made, new.....	2, 989
(Transfer from old to new system.)	
Notices of leaks to agents, etc.....	20, 869
Numbers put on plats, alley houses, squares.....	40
Permits for use of fire hydrants.....	115
Permits for use of water for building purposes.....	842
Plumbers' permits examined and approved.....	1, 726
Plats made showing locations of taps.....	1, 113
Repairs to services recorded.....	2, 652
Record cards made and checked.....	8, 230
Refunds of duplicate and erroneous payments.....	173
Repair cards made for record.....	351
Reports checked, inspectors'.....	3, 791
Reports made, weekly.....	52
Requests for bills indexed and filed.....	659
Requisitions made.....	39
Schedule accounts opened, new.....	2, 036
Schedule account cards made, new.....	69, 994
(Transfer from old to new system.)	
Schedule bills made and checked.....	72, 639
Second examinations of house-to-house leaks recorded.....	7, 274
Special examinations recorded.....	28, 177
Taps issued.....	2, 345
Transfer of tap records from books to card system.....	6, 562
Tap locations recorded.....	3, 356
Turn-on orders made and recorded.....	1, 565
Vacant houses listed and cut off.....	651
Vouchers made.....	7
Water-main measurements given to plumbers.....	5, 203
Work orders made.....	4, 420

FIELD WORK, GENERAL.

Cut off by request.....	1, 445
Cut off for nonpayment, meter accounts.....	133
Cut off for nonpayment, schedule accounts.....	379
Cut off for vacancy.....	651

Cuts repaired.....	464
Delinquent water-rent notices served by inspectors.....	9, 628
House-to-house examinations.....	36, 119
House-to-house leaks found.....	6, 155
Meter bills delivered by inspectors.....	12, 752
New water services inspected.....	2, 142
Notifications by inspectors for nonpayment.....	861
Repairs to water services, etc., inspected.....	2, 652
Schedule bills delivered by inspectors.....	47, 679
Special examinations, ratings.....	28, 177
Taps inserted in water mains.....	3, 075
Turned on by request.....	1, 884

LEAKS AND WASTES.

Abandoned water services cut off at tap in main.....	1, 032
Cut off at box for leak.....	1, 314
Cut off at main for leak.....	173
Leaks found on water mains.....	18
Locating stopcock boxes.....	520
Second house-to-house examination of leaks.....	7, 274
Special leak examinations.....	14, 714
Special leak examinations, second inspection.....	21, 446
Tracing leaks to determine their source.....	3, 567

WATER METERS.

Adjusting pits to grade.....	160
District of Columbia meters installed.....	1, 617
District of Columbia meters installed in municipal buildings.....	20
Examinations relative to leaks.....	47
Examinations relative to pressure.....	5
Leaks repaired.....	10
Meters read.....	93, 622
Registers replaced.....	1
Removed for leak.....	22
Removed for nonregistration.....	671
Removed for test.....	35
Removed from abandoned services.....	28
Repaired in place.....	2
Reset after repairs.....	704
Pit tops replaced.....	3
Temporary meters installed.....	283
Temporary meters removed.....	195

SERVICE PIPES, ETC.

Abandoned services cut off.....	1, 032
Connecting services.....	16
Examinations relative to repairs.....	69
Leaks repaired in services.....	14
New curb cocks placed.....	15
New street washers installed.....	2
Street washer repaired.....	1
Sidewalk cuts repaved.....	4
Stopcock raised to grade.....	1
Tap connections repaired.....	3

LEAKS AND WASTES.

Special attention has been given during the past year to the cutting off of abandoned water services at the tap in the main, thus eliminating a continual source of trouble from leakage due to old pipes. During the year 1,032 services of this kind were cut off.

The abandonment of these services is caused by buildings being torn down, new services being introduced, and a larger supply being required.

In order to prevent leakage of water in vacant houses, also as a protection to the revenue, as soon as the vacancy occurs the water supply is cut off and is not restored until the house is reoccupied.

The supply to 651 vacant houses was cut off during the year.

SERVICE CONNECTIONS.

Two thousand and thirty-six new service connections were made, inspected, and locations recorded during the year.

Two thousand six hundred and fifty repairs, etc., to water services and their appurtenances were inspected and recorded.

Owing to the increase of business along this line, it was found necessary to provide an emergency tapping outfit, which is kept at the office, and should the tapper be unable to handle the work the assistant tapper is sent out to lend assistance.

While not so engaged this employee is detailed to clerical work in the office.

In order to give prompt action to the inspection of service pipes it has been found necessary at times, owing to the great increase in work of this character, to send out as many as four men to assist the inspector having this work in charge. It is the aim of the office to have such inspections made within one hour of the time specified by the plumber.

WATER METERS.

One thousand nine hundred and sixty-eight water meters were installed during the year, making the total number now in use 14,579.

To facilitate the work in connection with the meters in service, the following system has been adopted, and has been in successful operation since its inception:

Meters are separated under these heads, viz: Private meters where the consumption exceeds 100,000 cubic feet per quarter; private meters where the consumption does not exceed 100,000 cubic feet per quarter; fire-service meters; District of Columbia meters that have not exceeded the maximum allowance for the annual minimum payment; District of Columbia meters that have exceeded the maximum allowance for the annual minimum payment; District of Columbia meters in premises where leaks were found; District of Columbia meters in municipal institutions.

Private meters in business establishments that exceed 100,000 cubic feet a quarter are read weekly, and a statement of the consumption is recorded on a card provided by this office, which is posted in some convenient place on the premises. This plan has proved most satisfactory both to the consumer and to the office, inasmuch as it has reduced the number of arguments in regard to large bills to a minimum. By this method the owner of the place is kept in touch with his account from week to week, which has resulted in prompt action on his part in cutting down all waste of water.

Private meters where the consumption does not exceed 100,000 cubic feet per quarter are read monthly. If the consumption shows an extraordinary use of water, an examination is made for leaks, and if any are found the responsible party is notified.

Detector meters are examined monthly, and if any show a registration an investigation is immediately made as to the cause, and explanation demanded.

District of Columbia meters in municipal institutions are read monthly, and the responsible department is notified if leaks or wastes are found.

District of Columbia meters installed on service pipes supplying private residences are read at frequent intervals, averaging about once a month. Where the consumption is greatly in excess for that portion of the year based on the amount allowed per annum in consideration of the payment of the \$4.50 in advance, special reading cards are made up, and these houses are kept under constant observation. Where leaks are found in metered premises the occupant and agents (if they have a request on file for such information) are notified, and in case no attention is paid to such warnings and the leaks are large enough to justify such action the supply is discontinued until the proper repairs are made. For convenience in handling such accounts houses are divided into three classes: First, large houses where considerable water is required. In such cases if abnormal use of water is indicated by the meter, the occupant is notified by card to that effect and the case is dropped. Second, medium-sized houses. If the consumption is found to be excessive a notice is sent to that effect, and if after a reasonable time no change is observed an examination is made, and if leaks are found the occupant is again notified that if this condition is allowed to continue large bills will naturally result. Third, small houses which are occupied in many instances by irresponsible parties. In such cases where an extraordinary wastage of water is found the supply is discontinued after one notice has been served.

In the first two classes the notices are generally met with prompt action on the part of the occupant or agent; but in the latter class considerable trouble is experienced, as the principal waste can be traced to these small houses. One of the many instances of the amount of water saved by this system of supervision will serve to illustrate its efficiency. The registration of the meter in a small house indicated an extraordinary consumption since last reading, and on examination of the premises a hydrant was found running nearly full head, in addition to other leaks of a minor character. Notices

were served on both occupant and agent, and the water promptly cut off. Had this wastage been allowed to continue to the end of the year, 5,721,970 gallons of water would have been consumed (based on the actual meter measurement) and the bill would have amounted to \$228.88. As a further illustration of the excellent work performed by the meters in cutting down the waste of water, in many instances after leaks have been remedied on notice from this office a later reading revealed the fact that other leaks had developed in the meantime. In some cases as many as six repairs have been made in as many months. In no way can such conditions be controlled except by meter, without great expense; and then, too, the fact that all water that passes through the meter must be paid for is an enormous factor in bringing about speedy repairs and a reasonable use of water. In the majority of houses that pay in excess of the annual minimum rate, leaks have been found which were only remedied after a warning from this office, and the bill for excess has been rendered. It is safe to predict that all leaks in those premises hereafter will receive the prompt attention of the occupants.

INSTALLATION OF METERS.

Owing to lack of funds very little progress was made in the installation of meters this year. All that could be accomplished under the circumstances was to go over the territory embracing the areas supplied by the second, third, and fourth high service, which has been covered in previous years, and meter all new houses that had been constructed in the meantime, in order to keep these sections fully metered. As the work was extremely scattered, the cost of installation was necessarily increased. It is believed, however, that a creditable showing has been made.

The following shows the average cost of installing a meter:

Meter.....	\$8.50
Material.....	5.00
Labor.....	2.44
Total.....	15.94

The following table shows the force engaged in installation:

In charge.....	a 1
Plumber.....	1
Laborers.....	5
2-horse wagon.....	1
1-horse wagon.....	1

The following additional work was performed in connection with the installation of meters: Adjusting meters to proper grade, repairing street washers, installing stop-cocks, removing meters, reporting cuts in improved pavements, repairing service pipes, taking out and resetting meters for test and repairs.^b

TABLES.

Table I shows statement of collections.

Table II shows comparative statement of revenues.

Table III shows number of water meters in service.

Table IV shows number of water meters repaired.

Table V shows consumption of water in private residences.

Table VI shows consumption of water in buildings owned and controlled by the District of Columbia.

Table VII shows consumption of water in premises which receive a free allowance.

Table VIII shows consumption of water in business establishments.

Table IX shows leakage and wastage of water.

Table X shows schedule rating of various premises.

REVENUES.

The table of comparative revenues shows an increase over the previous year of \$25,244.79.

^aAs this man also has charge of taking out and resetting meters for test and repairs and repairs to service pipes, only half of his time and the cost of the horse and wagon used by him is properly chargeable to installation.

^bWhen a meter is taken out on account of nonregistration or for test a meter is installed in its stead, and the old one, after it has been tested and repaired, is placed in stock, and when needed is installed in some other place.

CARD RECORD SYSTEM.

All records of the office have been brought under the card record system, there being about 225,000 records and accounts kept in this manner.

CONDITION OF WORK.

Notwithstanding the large increase in business over the previous year, the current work was up to date at the close of this year, and my acknowledgments are due to the employees engaged for the results accomplished.

Very respectfully, your obedient servant,

GEO. W. WALLACE,
Water Registrar.

The SUPERINTENDENT OF THE WATER DEPARTMENT.

TABLE I.—Statement of collections.

Water rents:		
Schedule.....	\$290, 276. 87	
Meters.....	208, 321. 44	
		\$498, 598. 31
Water-main assessments.....		57, 654. 06
Taps and stopcocks.....		10, 674. 15
Building purposes.....	4, 296. 14	
Sale of old material, etc.....	1, 530. 08	
		5, 826. 22
		572, 752. 74

TABLE II.—Comparative statement of revenues.

Fiscal year.	Water rents.	Water-main assessment.	Taps and stopcocks.	Miscellaneous.	Total revenues.
1898.....	\$264, 784. 48	\$58, 152. 56	\$6, 910. 65	\$1, 104. 42	\$330, 952. 11
1899.....	276, 065. 54	62, 937. 43	6, 327. 00	1, 545. 15	346, 875. 12
1900.....	286, 257. 63	53, 420. 70	5, 208. 15	4, 452. 53	349, 339. 01
1901.....	303, 557. 19	56, 359. 72	6, 140. 85	3, 064. 39	369, 122. 15
1902.....	318, 404. 39	65, 962. 47	6, 368. 16	4, 659. 00	395, 394. 02
1903.....	326, 789. 26	70, 880. 32	6, 787. 77	3, 628. 18	408, 085. 53
1904.....	340, 131. 72	51, 575. 87	6, 522. 67	2, 839. 66	401, 069. 92
1905.....	349, 264. 26	32, 192. 77	8, 603. 80	5, 737. 69	395, 798. 52
1906.....	359, 699. 35	34, 352. 70	9, 100. 00	2, 633. 85	405, 785. 90
1907.....	466, 452. 19	51, 313. 97	9, 487. 10	8, 697. 66	535, 950. 92
1908.....	477, 306. 64	57, 462. 39	8, 688. 10	4, 050. 82	547, 507. 95
1909.....	498, 598. 31	57, 654. 06	10, 674. 15	5, 826. 22	572, 752. 74
1910 ^a	513, 000. 00	57, 000. 00	10, 000. 00	4, 000. 00	584, 000. 00
1911 ^a	523, 000. 00	57, 000. 00	10, 000. 00	5, 000. 00	595, 000. 00

^a Estimated.

Cash repayments:	
Salaries.....	\$61. 67
High service.....	1, 117. 32
General expenses.....	106. 50
	\$1, 285. 49
Credit to fund by transfer vouchers from various appropriations and deposits.....	48, 590. 10
	49, 875. 59
Receipts for water rents, etc.....	572, 752. 74
Receipts and reimbursements.....	622, 628. 33

TABLE III.—*Water meters.*

Make.	$\frac{1}{2}$ in.	$\frac{3}{8}$ in.	$\frac{1}{2}$ in.	1 in.	1 $\frac{1}{2}$ in.	1 $\frac{1}{2}$ in.	2 and $\frac{1}{2}$ in.	3 in.	4 in.	6 in.	8 in.	12 in.	Total.
American.....		152		3									155
Crown.....		5	13	38		31	17	9		2			115
Davies disk.....			1						1	1			1
Empire.....		52						1	1				54
Gem.....							29	21	9	2			61
Hersey.....		8,080	213	18		18	15	2	1	1			8,348
Hersey detector.....								3	4	5	1		13
Keystone (Pittsburg disk).....		156	32	40	2	23	17	18	1				289
King.....		157											157
Lambert.....		159	132	74		168	31	7	3	1			575
Nash.....	5	134	545	489		276	125	6	8	2			1,590
Niagara.....			6	3	2	8	4						23
Standard.....			11	7		8	1	1					28
Thomson.....	3	3	76	80		52	33	5	2				254
Trident.....		2,481	4	8		20	6	5	1	1			2,525
Union.....			35	44		12	8	1	1	1	2	1	105
Worthington.....		243	1	9		4	19	9	1				286
Total.....	8	11,622	1,069	813	4	620	305	88	32	14	3	1	14,579
Registers.....													5

Water services.....	60,117
Meters in service.....	14,579
Per cent of services metered.....	24
Private meters.....	2,463
Meters installed by the District of Columbia.....	12,116

TABLE IV.—*Meters repaired.*

Size of meter.	Meters re- paired.	Abutments.	Bridges.	Caps.	Disks.	Disks broken by hot water.	Dials.	Gears.	Meters cleaned.	Lids.	Pistons.	Registers.	Shafts.	Strainers.	Stuffing boxes.	Parts repaired.
$\frac{1}{2}$ inch.....	1				1			1	92				1			3
$\frac{3}{8}$ inch.....	329	64			288	17			7			15	3	90	1	577
$\frac{1}{2}$ inch.....	122		1	2	74	9	8	80	3	2	4	13	27			223
1 inch.....	67		1	1	38	15	1	58			1	16	25		1	157
1 $\frac{1}{2}$ inches.....	2				1			3								4
1 $\frac{3}{4}$ inches.....	31				15	1		21			2	8	4			51
2 inches.....	38				14	2		27			7	3	7		1	61
3 inches.....	7				1	1		4			4	1	2			13
4 inches.....	7				3			5			1	1				10
Total.....	604	64	2	3	435	45	9	291	3	9	19	57	69	90	3	1,099

Total number of meters in service.....	14,579
Cost of labor and material for maintenance.....	\$3,861.28
Average cost per meter for maintenance.....	.26

TABLE V.—Table showing the number of houses that have paid the minimum rate of \$4.50; those that have exceeded the amount allowed under this payment; and a comparison between the amount of water allowed and the amount of water used, and the amount paid under the flat rate and meter rate.

	Houses.	Amount of water allowed per annum under payment of \$4.50.	Amount of water actually used.	Difference.	Amount used in excess.	Paid meter rate, 1909.	Paid schedule rate, 1908.
		<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>		
Paid minimum rate..	8,397	125,955,000	54,763,300	71,191,700	.....	\$37,786.50	\$58,779.00
Paid fractional minimum rate.....	239	2,390,000	1,336,400	1,053,600	.....	717.80	1,610.08
Paid in excess of minimum rate.....	1,540	23,100,000	37,938,800	.....	14,838,800	10,798.41	12,005.69
Paid in excess of fractional minimum rate.....	25	250,000	400,700	.....	150,700	120.21	225.00
Two or more houses on one service.....	24	360,000	284,800	75,200	.....	112.50	176.10
Vacated before payment could be enforced.....	35	525,000	294,400	230,600	.....	41.44	243.00
No payment for fiscal year 1909 (vacant).....	68	.....	17,100	.....	.....	.....	450.75
Total.....	10,328	152,580,000	95,035,500	72,551,100	14,989,500	49,576.86	73,490.22

Premises.....	10,328
Amount paid.....	\$49,576.86
Average payment for each premises.....	\$4.80

Considering only the houses occupied during the full year:

Rate:	
Schedule.....	\$7.12
Meter.....	4.88
	2.24
Meters installed by the District of Columbia during the fiscal year.....	1,617

TABLE VI.—Meters installed in various buildings owned and controlled by the District government.

Class of building.	Annual consumption.	Premises.	Meters.
	<i>Cubic feet.</i>		
Police stations.....	3,411,100	11	11
Engine and truck houses.....	3,235,900	27	28
Schoolhouses, annexes, etc.....	4,299,000	55	59
Workhouse grounds.....	1,032,200	1	7
District of Columbia stables.....	436,500	1	2
District of Columbia morgue.....	16,300	1	1
Cement warehouse.....	5,000	1	1
Parking commission stables.....	76,100	1	1
Ambulance, Board of Charities.....	9,800	1	1
Municipal lodging house.....	37,900	1	1
Public hydrant, Joliet street and Wisconsin avenue.....	29,200	1	1
Lodge house, Brightwood reservoir.....	6,900	1	1
Total.....	12,595,900	102	114

TABLE VII.—Premises which receive an allowance of free water.

Character.	Number.	Consumption.	Allowance.	Exceeded.	Paid.
		<i>Cubic feet.</i>	<i>Cubic feet.</i>		
Churches.....	77	3,790,800	5,147,065	9	\$326.17
Orphan asylums.....	7	1,928,200	2,163,400	4	109.81
Hospitals.....	8	8,911,300	6,041,000	5	985.05
Homes.....	14	2,087,290	2,781,500	2	19.28
Schools.....	6	1,105,800	2,026,800	.....	.....
Total.....	112	17,823,390	18,159,765	20	1,434.41

TABLE VIII.—Miscellaneous business establishments under meter, and amount of water consumed for the fiscal year 1909.

Miscellaneous business establishments.	15,000 cubic feet or less.		15,000 to 100,000 cubic feet.		100,000 to 1,000,000 cubic feet.		1,000,000 cubic feet and over.		Total premises of each class.
	Premises.	Cubic feet.	Premises.	Cubic feet.	Premises.	Cubic feet.	Premises.	Cubic feet.	
Apartment houses.....	40	276,300	298	12,663,400	233	61,217,800	4	8,489,300	575
Armories.....				93,000		439,600			2
Art galleries.....			1	39,400	3	111,700			3
Ball grounds.....		36,600	29	1,081,200	1	3,837,800			2
Bakeries.....	3	15,000	11	419,200	12	2,923,600	1	2,170,000	45
Banks.....	2	19,900	5	271,500	6	114,500	1	1,427,100	20
Barber shops.....	1	7,700			1				8
Blacksmith shop.....	1	7,900	2	44,500					1
Boat houses.....	1	33,100							3
Book stores.....	2	8,500	9	408,900					2
Bottling works.....	2	13,700			8	3,282,500			19
Bowling alleys.....	1		2	108,700	2	522,800			3
Breweries.....				42,300			7	10,520,200	9
Candy factories.....			2						2
Carpenter shop.....		13,800							1
Ceneteries.....	1	14,200	7	433,600	2	325,900			11
Club houses.....	2	39,800	7	382,900	10	1,594,200			24
Coal yards.....	5	41,200	10	497,200	12	446,000	2	5,888,100	18
Commission merchants.....	6		3	214,500	1	595,500			4
Confectioneries.....		18,300	6	406,100	1	44,500			9
Dairies.....	2	31,400	11	603,000	8	2,286,600	2	2,057,900	24
Department stores.....	4	26,200	6	201,100	8	1,022,300	2	9,114,500	20
Drug stores.....	3	39,100	10	635,300	8	736,700			16
Dye works.....	4	40,900	13	704,100	4	491,000			21
Electrical supply store.....			1	92,500					1
Florists.....	4	24,300	12	570,200	8	2,720,900			24
Furniture stores.....	1	5,200	5	202,100	4	1,082,000			10
Garages.....	1	6,400	13	596,200	9	2,505,700	1	1,910,500	24
Gas fixtures.....		13,200							1
Gas works.....	3	28,800	2	95,600	3	2,876,000			8
Glassware store.....			1	33,000					1
Groceries.....	2	15,000	14	688,200	3	403,600	1	3,745,900	20
Hubbards.....	4	22,800	6	293,400	3	83,500			13
Hair dresser.....			1	35,100					1
Halls.....		16,000	12	647,200	9	1,558,800			25
Hardware stores.....	4	8,900	2	58,500					3
Homes.....	1	6,800	4	182,300	3	504,400			8
Hospitals.....									2
Hotels.....	2	10,600	31	1,108,500					93
Ice yards and plants.....	1	4,800	1	38,800	48	18,996,100	12	42,235,000	13
Iron and brass dealers.....	6	37,200	11	511,200	3	1,633,000	8	50,603,700	22

Jewelers.....	2	5,200	7	253,900	1	132,700	10
Ladies' outfitters.....	4	27,400	3	204,000	2	476,400	1
Ladies' dresses.....	1	5,000					1
Lithographers.....	1	2,000					4
Lumber and saw mills.....	2	15,000	9	537,900	3	201,100	14
Lunch rooms.....	1	7,100	16	1,014,500	13	2,480,400	30
Markets.....	1	8,500	1	61,400	6	1,653,300	1
Office buildings.....	12	102,400	86	4,200,900	72	20,122,600	172
Oil works.....			2	71,600			2
Opticians.....	1	11,100	2	74,300			3
Optical rug dealer.....	1	14,600					1
Paint stores.....	2	8,100					2
Patent attorneys.....			2	50,100			2
Photographic supplies.....	1	8,800	11	617,700	4	544,500	16
Piano dealers.....	2	22,000	6	257,000	2	314,100	10
Plumber's shop.....	1	2,300					1
Plumbing supply stores.....	1	12,100					2
Pool rooms.....			1	58,800	1	212,000	3
Printing offices.....	2	14,300	2	38,300	12	3,803,300	25
Railroad offices and yards.....			8	417,400	2	695,700	5
Rubber goods.....							1
Saloons and restaurants.....			1	15,100			2
Sausage and dressed meat dealers.....	8	94,300	272	16,490,200	105	16,977,700	386
Schools and seminaries.....			4	909,700	4	2,300,700	8
Sewing-machine stores.....	7	70,600	32	1,476,500	22	5,232,200	63
Shoe stores.....			2	132,000			2
Small manufactories.....	10	73,100	26	118,100			2
Souvenir stores.....			1	118,200	5	1,252,900	42
Stables.....	18	191,000	1	77,200	1	243,700	2
Steam laundries.....			68	3,874,600	38	8,515,800	124
Steam mills.....	2	5,500	7	1,154,900	10	5,425,100	26
Steamboat offices.....			2	538,800	1	300,000	3
Stone yards.....			1	63,000	5	1,531,800	6
Stove store.....	1	11,600	5	251,300	5	1,251,200	10
Street railway station and power plant.....	8	39,600	3	237,800	14	4,370,200	1
Tailor shops.....	3	21,200	3	130,600			26
Telephone and telegraph exchanges.....	1	8,700	4	195,800	2	1,080,300	7
Tobacconists.....	2	12,200	1	15,800			4
Trunk stores.....			2	89,000			4
Theaters.....	3	14,000			7	2,995,900	10
Turkish baths.....					2	1,345,500	2
Undertakers.....	1	14,800	4	159,700			5
Universities.....			2	136,200	3	515,000	5
Veterinary hospitals.....	2	16,200	3	200,000	1	131,400	6
Wall-paper stores.....	1	3,400	4	145,400			5
Warehouses.....	5	37,300		688,100	1	150,200	14
Vacant, etc.....	40	54,100	8	244,400	3	663,400	51
Total.....	262	1,816,100	1,171	60,582,700	754	200,478,300	2,253
Private residences.....	43	371,900	82	3,647,300	11	2,547,000	138
Grand total.....	305	2,188,000	1,253	64,230,000	765	203,025,900	2,391

TABLE IX.—*Leakage and wastage of water, etc.*

House-to-house examinations.....	36,119
House-to-house leaks found.....	6,155
Special leak examinations.....	14,714
Taps inserted in water mains.....	3,075
Meters installed by the District of Columbia in private residences.....	1,617
Meters installed by the District of Columbia in municipal buildings.....	20
Meters installed by private parties at their own expense.....	331
Meters in service.....	14,579
Water services, number of.....	60,117
Percentage of water services which are metered.....	24
Average cost of installing a water meter by the District of Columbia.....	\$15.94
Average cost of repairs to water meters.....	\$0.26
Average payment for premises in which meters were installed by the District of Columbia.....	\$4.80
Average payment for premises in which private meters were installed.....	\$65.80
Average payment for domestic purposes and business in connection therewith, schedule accounts.....	\$6.166
Average payment for business purposes, schedule accounts.....	\$7.81

TABLE X.

DOMESTIC PURPOSES.

Rate.	Full payments.		Fractional pay- ments. (Premises occupied portion of a year.		Vacant.	Total.		Business in connection with domes- tic pur- poses. (See Table X, continua.) ^a
	Number.	Amount.	Number.	Amount.		Number.	Amount.	
\$4.50.....	18,433	\$82,948.50	548	\$1,624.27	127	19,108	\$84,572.77	1,331
4.80.....	2,131	10,228.80	135	395.50	12	2,278	10,624.30	236
5.10.....	1,759	8,970.90	110	342.02	9	1,878	9,312.92	254
5.40.....	762	4,114.80	52	164.11	2	816	4,278.91	161
5.70.....	1,770	10,089.00	226	1,018.14	12	2,108	11,107.14	505
6.00.....	3,855	23,130.00	129	521.17	36	4,020	23,651.17	337
6.30.....	850	2,205.00	36	121.40	1	887	2,326.40	122
6.40.....	1,209	7,737.00	86	385.37	8	1,303	8,122.37	70
6.60.....	139	917.40	14	48.88	3	156	966.28	63
6.80.....	1,369	9,309.20	83	364.38	22	1,474	9,673.58	82
6.90.....	211	1,455.90	37	127.29	3	251	1,583.19	75
7.20.....	999	7,192.80	48	218.06	10	1,057	7,410.86	143
7.50.....	430	3,300.00	42	187.76	2	484	3,487.76	54
7.60.....	1,313	9,978.80	90	418.70	18	1,421	10,397.50	158
7.80.....	53	413.40	9	33.99	1	63	447.39	21
8.00.....	105	4,840.00	47	269.87	4	656	5,109.87	66
8.10.....	65	526.50	18	59.83	.....	83	586.33	12
8.40.....	404	3,393.00	58	291.66	10	472	3,685.26	66
8.50.....	385	3,272.50	31	183.18	5	421	3,455.68	18
8.70.....	52	452.60	12	58.14	1	65	510.74	22
8.80.....	206	1,812.80	31	151.55	1	238	1,964.35	43
9.00.....	326	2,934.00	35	235.65	10	371	3,169.65	73
9.20.....	203	1,867.60	15	83.13	.....	218	1,950.73	70
9.30.....	27	251.10	12	70.94	1	40	322.04	6
9.50.....	627	5,956.50	49	404.02	17	693	6,360.52	33
9.60.....	231	2,217.60	25	167.60	2	258	2,385.20	59
9.90.....	19	188.10	8	45.10	5	32	233.20	2
10.00.....	280	2,800.00	21	149.98	5	302	2,949.98	30
10.20.....	18	183.60	2	13.75	1	20	197.35	3
10.40.....	42	436.80	4	23.40	5	51	460.20	10
10.50.....	215	2,257.50	20	128.14	5	236	2,385.64	22
10.80.....	45	486.00	4	21.59	1	51	507.59	6
11.00.....	145	1,595.00	16	125.67	2	162	1,720.67	19
11.10.....	8	88.80	.....	.....	1	9	88.80	1
11.20.....	13	145.60	.....	.....	1	14	145.60	1
11.40.....	35	399.00	2	19.59	1	42	418.59	4
11.50.....	153	1,759.50	3	19.83	5	157	1,779.33	18
11.60.....	32	371.20	18	182.66	1	51	553.86	7
11.70.....	8	93.60	2	13.65	1	10	107.25	2
12.00.....	225	2,700.00	3	20.71	.....	233	2,720.71	21
12.30.....	8	98.40	19	264.00	5	27	362.40	1
12.40.....	9	235.00	2	14.98	.....	21	250.58	1
12.50.....	70	875.00	4	345.42	.....	74	1,220.42	6
12.60.....	23	289.80	.....	.....	2	25	289.80	1

^a This column shows where business occurs on domestic accounts, and is included in amounts on table page 89, column C.

TABLE X—Continued.

DOMESTIC PURPOSES—Continued.

Rate.	Full payments.		Fractional pay- ments. (Premises occupied portion of a year.)		Vacant.	Total.		Business in connection with do- mestic pur- poses. (See Table X, continued.)
	Number.	Amount.	Number.	Amount.		Number.	Amount.	
\$12.80	9	\$115.20			1	10	\$115.20	3
12.90	2	25.80				2	25.80	
13.00	38	494.00	8	\$67.71	1	47	561.71	6
13.20	20	264.00	2	8.66		22	272.66	3
13.50	34	459.00	3	38.84	2	39	497.84	6
13.60	10	136.00				10	136.00	
13.80	22	303.00	9	105.96	2	33	409.56	
14.00	22	308.00	1	9.92		23	317.92	6
14.10	2	28.20				2	28.20	
14.30	38	547.20	9	89.42		47	636.62	3
14.50	37	536.50	10	80.97	2	49	617.47	3
14.70	2	29.40				2	29.40	1
14.80	10	148.00	1	11.10		11	159.10	1
15.00	22	330.00	2	26.25	2	26	356.25	2
15.20	5	76.00	2	13.94		7	89.94	
15.50	11	170.50	2	17.45		13	187.95	1
15.60	23	358.80	4	38.85	1	28	397.65	6
15.90	2	31.80				2	31.80	1
16.00	14	224.00	31	435.40		45	659.40	2
16.20	11	178.20	1	11.48		12	189.68	5
16.40	2	32.80				2	32.80	
16.50	7	115.50				7	115.50	1
16.60	1	16.00				1	16.00	
16.80	3	50.40				3	50.40	1
17.00	15	255.00				15	255.00	1
17.20	5	86.00			1	6	86.00	
17.40	8	139.20				8	139.20	1
17.50	7	122.50				7	122.50	
17.60	5	88.00			1	6	88.00	
18.00	16	288.00				16	288.00	1
18.20	1	18.20				1	18.20	
18.50	7	129.50				7	129.50	
18.60	1	18.00				1	18.00	
18.80	8	150.40				8	150.40	
18.90	1	18.90				1	18.90	
19.00	9	171.00				9	171.00	
19.20	1	19.20				1	19.20	
19.50	17	331.50			1	18	331.50	4
19.60	3	58.80				3	58.80	1
19.80	2	39.60			1	3	39.60	
20.00	6	120.00			1	7	120.00	1
20.40	8	163.20			1	9	163.20	
20.50	3	61.50				3	61.50	1
20.70	2	41.40				2	41.40	
21.00	9	189.00				9	189.00	1
21.20	1	21.20				1	21.20	1
21.50	6	129.00				6	129.00	
21.60	2	43.20				2	43.20	
22.00	14	308.00			1	15	308.00	2
22.50	9	202.50				9	202.50	1
22.80	1	22.80				1	22.80	1
23.00	6	138.00				6	138.00	2
23.20	1	23.20				1	23.20	
23.40	1	23.40			1	2	23.40	
23.50	3	70.50				3	70.50	1
23.60	1	23.60				1	23.60	
23.70	1	23.70				1	23.70	
24.00	7	168.00				7	168.00	
24.40	1	24.40				1	24.40	1
24.50	5	122.50			1	6	122.50	1
24.60	2	49.20				2	49.20	
24.90	1	24.90				1	24.90	
25.00	1	25.00				1	25.00	
25.20	1	25.20				1	25.20	
25.50	1	25.50				1	25.50	
26.00	3	78.00				3	78.00	
26.40	1	26.40				1	26.40	
26.50	5	132.50				5	132.50	
27.00	1	27.00				1	27.00	1
27.50	1	27.50				1	27.50	1
28.00	3	84.00				3	84.00	2
28.20	1	28.20				1	28.20	1
28.50	1	28.50				1	28.50	
28.80	2	57.60				2	57.60	

TABLE X—Continued.

DOMESTIC PURPOSES—Continued.

Rate.	Full payments.		Fractional payments. (Premises occupied portion of a year).		Vacant.	Total.		Business in connection with domestic purposes. (See Table X, continued.)
	Number.	Amount.	Number.	Amount.		Number.	Amount.	
\$29.00.....	1	\$29.00				1	\$29.00	
29.40.....	2	58.80				2	58.80	
29.50.....	1	29.50				1	29.50	1
29.60.....	1	29.60				1	29.60	
30.50.....	1	30.50				1	30.50	
31.00.....	1	31.00				1	31.00	
31.50.....	1	31.50				1	31.50	
31.80.....	2	63.60				2	63.60	1
32.00.....	2	64.00				2	64.00	1
32.50.....	1	32.50			1	2	32.50	
33.00.....	5	165.00				5	165.00	2
34.80.....	1	34.80				1	34.80	1
35.40.....	1	35.40				1	35.40	
35.50.....	1	35.50				1	35.50	1
36.00.....	1	36.00				1	36.00	1
37.20.....	1	37.20				1	37.20	
37.50.....	1	37.50				1	37.50	
45.00.....	1	45.00				1	45.00	
47.40.....	1	47.40				1	47.40	
3.50.....	36	159.00	1	\$1.46	6	43	100.46	
Total.....	39,898	235,025.70	2,292	10,292.49	385	^a 42,575	245,318.19	4,150

	Number of accounts.	Amount.
Domestic purposes:		
Full payment.....	39,898	\$235,025.70
Fractional payment.....	2,292	10,292.49
Business (included in above).....		^b 14,833.43
	42,190	260,151.62

^a 385 vacant; 42,190 live accounts.^b See next table, Column C.

Average payment for domestic purposes, schedule accounts, \$6.166.

TABLE X—Continued.
PREMISES HAVING BUSINESS CONDITIONS WHICH ARE CHARGED FOR WATER RENT UNDER THE FLAT RATE OR SCHEDULE SYSTEM—Con.

Number.	Character of business.	A. Full payments.		B. Fractional payments.			C. Business conditions on domestic purpose accounts, etc.			Total.	
		Accounts.	Amount paid.	Number.	Accounts.	Amount paid.	Number.	Amount paid.	Number.	Accounts.	Amount paid.
12	Photograph galleries.....	12	\$87.00	1	.....	\$3.33	14	\$58.00	27	12	\$148.33
31	Pool rooms.....	31	100.00	5	.....	12.68	21	111.00	57	35	283.68
9	Printing offices.....	9	67.00	2	1	5.59	17	66.00	28	10	138.59
249	Schools.....	249	877.00	51	34	102.06	2	18.00	2	.....	18.00
.....	Shops.....	.....	.....	.....	.....	.....	545	977.00	845	283	1,956.06
.....	Slaughter houses.....	.....	.....	.....	.....	.....	1	5.00	1	.....	5.00
2	Smoke houses.....	2	5.00	.....	.....	.....	.....	.....	2	.....	5.00
4	Stone yards.....	4	20.00	.....	.....	.....	.....	.....	4	4	20.00
6	Storage rooms.....	6	14.00	.....	.....	.....	2	4.00	8	6	18.00
665	Stores.....	664	3,600.00	77	37	133.18	2,045	6,145.00	2,787	701	9,938.18
3	Street washers.....	3	6.00	.....	.....	.....	.....	.....	3	3	9.00
1	Studios.....	1	6.00	3	2	4.88	2	13.00	6	3	23.88
1	Tennis court.....	1	13.00	.....	.....	.....	.....	.....	1	1	13.00
6	Theaters.....	6	57.00	6	5	20.99	3	11.00	15	11	88.99
2	Undertakers.....	2	12.00	.....	.....	.....	16	59.00	18	2	71.00
34	Warehouses.....	34	181.00	7	6	12.64	4	14.00	45	40	207.64
7,788	Total.....	3,492	28,014.75	758	252	1,223.85	7,059	14,833.43	15,005	3,744	44,072.03

^a Accounted for on preceding table, with domestic purposes.

Average payment for business purposes, schedule accounts, \$7.81.

Business purposes:		Number.		Amount.	
Accounts—					
Full payment.....		3,492		\$28,014.75	
Fractional payment.....		252		1,223.85	
Total.....		3,744		29,238.60	

REPORT OF SUPERINTENDENT OF SEWERS.

WASHINGTON, September 30, 1909.

SIR: I have the honor to submit the following report for the fiscal year ending June 30, 1909:

DIVISION A.—*Drainage studies, plans, and engineering data.*

[SUPERINTENDENT.]

In addition to the minor plans, surveys, and estimates for sewer extensions and betterments during the year, certain large projects have been wholly or in part developed, and the work of accumulating the data essential for the proper design of drainage works materially advanced.

Rock Creek main interceptor.—Studies on this main interceptor have been completed and the surveys carried as far as Military road. The right of way has been obtained from P street bridge along Rock Creek to a point somewhat beyond Massachusetts avenue, and it is anticipated that the remainder to the park system will be secured during the present year, which will complete the right of way to the district line. Detailed plans of stream crossings and other special features are in course of preparation. This main interceptor has been designed to provide for the drainage of practically the entire Rock Creek valley, and will form substantially an extension of the Rock Creek and B street intercepting sewer of the sewage disposal system. It will afford an outlet for the sewerage of the section along the west side of this valley as far as the District line, now practically unprovided with drainage facilities. It will also be of great value in preventing stream pollution from the growing population in the upper valley, a very important feature of the necessary future protection of the park system.

Anacostia main interceptor.—Studies have also been in progress on the Anacostia main interceptor which is designed to provide for the drainage of the Anacostia River valley and the protection of that stream from sewage pollution. General plans have been completed and profiles partly determined which will require substation lifts at Benning, at the Anacostia Bridge, and at Poplar Point, where connection will be made with the trunk line of the sewage disposal system, through which drainage will be delivered to the outfall at Grimes on the Potomac River. The right of way also has been secured between Poplar Point and Benning, covering about 3 miles of the line, the greater portion of which was by voluntary dedication on the part of the Baltimore and Ohio Railroad. At present all sewage from the territory east of the river, including the town of Anacostia, is discharged directly upon the Anacostia flats, and the greater portion in front of the United States Navy-Yard.

Upper Potomac interceptor.—Studies were begun during the year on the upper Potomac interceptor. This is designed as a collector for all sewage discharging into the Potomac along the West Washington water front, ultimately to be extended as far westward as the District line. The interceptor will deliver the drainage at Twenty-seventh and K streets NW. to the Rock Creek and B street interceptor of the sewage disposal system, whence it will be discharged through the sewerage pumping station to the outfall. Substantially all the sewage of West Washington at present discharges directly into the river through the various outlets along the water front, and there is also a considerable and increasing quantity discharged by the College Pond and the Arizona avenue trunk sewers just to the westward. While this reach of river is deep and narrow, affording rather favorable conditions for disposal by dilution, it is believed to be desirable in the interest of sanitation to begin the construction of this interceptor within the next few years.

East side interceptor.—Boundary to Brookland. On the boundary to Brookland division of the east side interceptor plans have been prepared for five sections under contract, one of which is in tunnel under the Rhode Island avenue divide at a depth of 110 feet. In addition the by-pass at the boundary sewer and the low-grade crossing at Hickey's Run have been constructed by day labor. Plans have been prepared also for the special sections connecting this line with the sewage disposal system. These will be completed early in the next fiscal year, and drainage will then be available for the entire area as far northward as Rhode Island avenue. Detail plans for the lateral service system for Langdon, Woodbridge, Sherwood, and East Brookland have been developed and several of these sewers constructed or contracted for.

THE COMBINED SYSTEM.

Piney Branch trunk sewer.—The rapid development of the Piney Branch valley within the past two years, transforming considerable sections of agricultural land into urban areas, has rendered necessary the extension of the combined system of sewerage into this drainage area. Plans have been prepared and estimates submitted for the trunk sewer for this valley extending as far eastward as Georgia avenue. The detail plans of the first section authorized for construction during the next fiscal year are now in course of preparation. It is believed to be advisable to somewhat anticipate the completion of this trunk line and designate the entire area as part of the combined system.

THE SEPARATE SYSTEM.

The separate system of sewerage has been largely developed during the year, so that at the present time a suburban area about twice the size of the city of Washington is provided with drainage, making a substantial advance in the protection of the streams, particularly in the park system of Rock Creek valley, from pollution. The Falls Branch trunk line was extended during the year so as to serve the westerly portion of Tenley and Reno, and the Soapstone Branch line built into the southerly portion of these two areas. Neither of these sewers was previously available for service. The construction of the separate system trunk sewer in Rock Creek valley not only rendered possible the utilization of the Soapstone Branch sewer, but this trunk line is now being extended northward so as to furnish needed drainage both in the Broad Branch and the Luzon avenue valleys, as well as for a considerable additional area west of Rock Creek, thus providing all necessary separate system main lines, arranged to discharge to the sewage disposal system, so that it is now possible to develop the lateral system as required.

East of Rock Creek the area bordering on Sixteenth street from Piney Branch valley northward and extending well to the eastward of Georgia avenue near the District line is also being provided with separate system trunk lines. These areas, containing a considerable and growing population, were heretofore entirely unprovided with sewerage facilities, which were greatly needed in the more closely built-up and growing sections, such as Tenley, Reno, West Brightwood, and the westerly portion of Takoma.

SEMI-COMBINED SYSTEM.

For certain areas along small streams or in or adjacent to the park system, the upper reaches of which include built-up areas, a special semi-combined drainage system has been devised, which provides for all storm water and sewage discharge from the built-up area, and the outlet serving as a separate system interceptor in the lower valley, where it parallels the stream. In the comparatively rugged topography along Rock Creek this system permits the maintenance of the small attractive streams clear of pollution from sewage and street washings coming down from the upper areas, and at the same time effects a considerable saving in the cost of sewer construction by the reduced sizes required, as well as avoiding the disfigurement of natural conditions. The first plans under this system were made for the valley north of R street, where such park conditions prevail, and, the rights of way having been obtained by voluntary dedication for the greater part, the system was constructed and placed in operation during the year.

RAINFALL AND RUN-OFF.

Rainfall.—Synchronous observations of rainfall were carried on during the year at two new stations, each equipped with automatic recording gauges, one located in the Anacostia River valley near Bennings road and one on the river front at the sewerage pumping station. These two stations, in connection with the U. S. Weather Bureau at Twenty-fourth and M streets, give three points of observation, one near the westerly city limits, one at the easterly boundary, and one at the south, with distances between stations west to east 4 miles, west to south 3 miles, and east to south 2 miles. Valuable additions to rainfall records, which have been accumulating during the past twenty years, were obtained, but the gauges are as yet insufficient in number to furnish adequate data for run-off studies. It is therefore planned during the next year to establish two additional recording gauges which will form a quadrilateral of observation covering about 20 square miles of city area and to supplement this record with a series of sight-reading gauges covering intermediate points as well as a considerable outlying district of higher elevation north of the city. The importance of extending the field of observation on rainfall for run-off studies from that of single station record to a series of properly located stations covering the urban area can not

well be overestimated. The design of all drainage works being so dependent upon rainfall data, it is considered a matter of primary importance that the observations be sufficiently complete so that the study and analysis of run-off can be intelligently made, leading to less dependence upon the approximations of the empirical formulæ. An illustration of the serious error of relying upon a single station observation is shown in the following abstract from the record of a 1909 storm:

Time (rainfall in inches).	Station 1.	Station 2.	Station 3.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
To 8 p. m.	0.00	0.00	0.00
To 9 p. m.	.10	.14	.06
To 10 p. m.	.55	.98	.20
To 11 p. m.	1.02	1.32	1.25
To 12	1.31	2.57	1.54
To 1 a. m.	1.81	3.16	2.95
To 2 a. m.	1.91	3.16	3.42

Run-off.—On run-off, a special district that includes the low area from which all storm water is pumped, has been selected for observation and study. This district contains 892.84 acres and comprises an entirely urban area, in which, however, are considerable park surfaces, so that it is quite characteristic of the local conditions. The available methods of measurement of the run-off in this case are unusually satisfactory, no current meter work being required. The storm water discharges into a large and deep conduit, which extends through the axis of the area and has a very small gradient (1.2000), forming a collecting reservoir in which an automatic recording gauge registers the storage and from which the pumps take their supply. Plans were completed during the year for the installation of the necessary measuring apparatus and accurate rate curves for the various pumps determined. The systematic collection of data for these studies will be begun as soon as the measuring apparatus is erected.

Progress has been made on the study of river flow and dilution in connection with the discharge of sewage from the disposal system into the Potomac River at Grimes. The data for river flow is based on the observations of the U. S. Geological Survey at the Point of Rocks Station, with a correction for the tidal flow and the additional run-off to Grimes. Quantity of sewage is determined by pump measurements. The following is a tabulation of the mean, maximum, and minimum flow of the Potomac River in feet for each month of the fiscal year, the average flow of sewage, and the dilution attained:

Month.	Average, river.	Maximum, river.	Minimum, river.	Average sewage.	Per cent sewage to water.
	<i>Sec.-feet.</i>	<i>Sec.-feet.</i>	<i>Sec.-feet.</i>	<i>Sec.-feet.</i>	
July.....	4,790	11,000	2,530	96	2.0
August.....	4,350	10,000	2,530	98	2.3
September.....	2,750	4,010	1,515	96	3.4
October.....	3,430	9,070	1,750	99	2.8
November.....	2,930	4,670	2,000	99	3.3
December.....	2,680	3,400	1,520	98	3.7
January.....	7,650	29,400	3,100	99	1.2
February.....	12,420	31,500	4,330	97	.7
March.....	9,570	14,600	5,020	95	1.0
April.....	18,360	73,900	4,670	96	0.5
May.....	9,870	24,800	5,020	97	1.0
June.....	12,220	19,800	5,750	86	.8

As may be indicated from this data, an analysis of the conditions of river flow in the Potomac basin seems clearly to indicate that the question of sewage treatment for the disposal works of the District of Columbia may safely be left in abeyance for many years, and certainly until the population considerably exceeds 750,000.

A more important subject for present consideration is that of maintaining the two comparatively small streams flowing through the city, Rock Creek and the Eastern Branch, free from sewage pollution, to which they are now unrestrainedly open, from the drainage of the considerable and increasing population in the upper areas of these two valleys. These are two areas lying within the State of Maryland, but which are adjacent to and drain directly into and through the District of Columbia.

The only practical solution of this problem is believed to be in the formation of a metropolitan district under the control of a state and national board, with power to construct the necessary valley interceptors for the removal of the sewage, and that these interceptors be arranged so as to discharge at the state line into the interceptors of the sewage disposal system of the District of Columbia, the District to be reimbursed for the cost of pumping and handling the sewage from the Maryland towns and villages by a state-collected tax levied upon the communities benefited, which would also defray the cost of construction and maintenance of the state system.

The present conditions are not such as to render this a matter of immediate urgency, but the population in these areas is quite rapidly increasing, so that for a subject so complicated, especially in the matter of jurisdiction and legislation, which will require a number of years to develop, it is believed not too soon to begin the study of the problem. The interests of the District are so immediate and the conservation of the purity of these streams so important for the protection of the park systems, and in the interest of the public health and sanitation, that it is respectfully recommended that a board be appointed to work in conjunction with such officials of the State of Maryland as may be designated for tentative consideration of the subject as soon as the necessary authority may be obtained.

DUTY TRIALS—PUMPING STATION.

Capacity tests and coal and steam duty trials to determine the efficiency of the various units, and of the plant as a whole, were made on the large pumping equipment furnished for the sewage-pumping station by the Allis-Chalmers Company, of Milwaukee, Wis., under their contract No. 3011. The plant includes six 293-horsepower water-tube boilers, also three 65,000,000 gallon and one 20,000,000 gallon triple expansion sewage-pumping engines and eight compound expansion 65,000,000 gallon stormwater pumping engines. This contract was for the entire pumping machinery, including pumps, engines, auxiliaries, boilers, mechanical stokers, economizer, boiler feed pumps, steam mains, and all apparatus necessary for the complete plant. The contract price was \$253,000 and the actual amount paid under the contract for the complete plant was \$251,929. The difference representing the amount of deductions and penalties.

The various tests and duty trials were run off from October to December, 1908. Each one of the 12 large pumping units was subjected to tests as to capacity and efficiency and the plant thoroughly tested as a whole. No defects were developed, and all the engines materially exceeded the contract requirements as to capacity and efficiency. It is worthy of note that during the three months of continuous tests there were no breakdowns or accidents of any sort to any part of the machinery. The following is a summary of the results of duty trials:

Results of duty trials for pumping machinery at the sewerage pumping station.

Pumping engine.		Capacity.		Coal duty.		Steam duty.	
		Million gallons per 24 hours.		Million foot-pounds per 100 pounds coal.		Million foot-pounds per 1,000 pounds steam.	
Class.	No.	Required.	Attained.	Required.	Attained.	Required.	Attained.
I.....	1	64.6	66.4	80	84.6	90	94.6
	2	64.6	67.2	80	84.6	90	94.6
	3	64.6	65.9	80	84.6	90	94.6
II.....	1	20.7	20.8	70	76.3	80	85.8
III.....	1	64.6	65.9	60	74	70	82.4
	2	64.6	65.3	60	74	70	82.4
	3	64.6	66.7	60	74	70	82.4
	4	64.6	65.9	60	74	70	82.4
IV.....	1	64.6	65.9	60	74	70	82.4
	2	64.6	65.3	60	74	70	82.4
	3	64.6	68.5	60	74	70	82.4
	4	64.6	66.6	60	74	70	82.4

DIVISION B.—*Maintenance, sewerage system.*

The maintenance of the sewerage system includes the flushing, cleaning, and repairing of (a) pipe sewers, length 424 miles; (b) main sewers, length 117 miles; (c) storm-water receiving basins, 3,340; (d) gravel catchment basins, 10.

Under the appropriation for cleaning and repairing sewers and basins the following work was performed:

Cleaning:

Main sewers cleaned.....	feet.....	11, 624
Pipe sewers cleaned.....	do.....	153, 145
Pipe sewers flushed.....	do.....	1, 873, 142
Manholes flushed.....	number.....	5, 295
Sumps cleaned.....	do.....	11
Storm-water receiving basins cleaned.....	do.....	52, 634
Storm-water receiving basins flushed.....	do.....	2, 829
Gravel catchment basins cleaned.....	do.....	9
Basin outlets cleaned.....	do.....	26

Sludge removed:

Main sewers.....	cubic feet.....	86, 778
Pipe sewers.....	do.....	3, 334
Storm-water receiving basins.....	do.....	188, 460
Gravel catchment basins.....	do.....	4, 968
Screens, sewerage pumping station.....	do.....	16, 394
Sediment chamber, sewerage pumping station.....	do.....	61, 695

Inspection and repairs:

Main sewers—

Main sewers inspected.....	miles.....	114
Bulkheads constructed.....	number.....	7
House connections inspected and repaired.....	do.....	56

Pipe sewers—

Pipe sewers inspected, length.....	miles.....	346
Pipe sewers relaid, including basin connections.....	feet.....	391
Settlements refilled.....	number.....	21
Manholes reconstructed.....	do.....	11
Manholes adjusted and repaired.....	do.....	19
Manholes abandoned.....	do.....	7
Manhole frames replaced.....	do.....	33
Manhole covers replaced.....	do.....	87

Basins, storm-water receiving—

Reconstructed.....	do.....	19
Repaired.....	do.....	34
Abandoned.....	do.....	17
Outlets repaired.....	do.....	9
Tops replaced.....	do.....	19
Alley grates replaced.....	do.....	27
Alley frames replaced.....	do.....	24

Cost:

Cleaning and inspection—

Inspecting main sewers.....	\$979. 63
Inspecting and cleaning gates and regulators.....	2, 663. 27
Cleaning main sewers.....	2, 962. 37
Cleaning pipe sewers.....	3, 712. 69
Flushing pipe sewers.....	1, 293. 42
Cleaning storm-water receiving basins.....	13, 841. 08
Flushing catch basins.....	305. 03
Inspecting and cleaning sumps.....	59. 66
Cleaning gravel catchment basins.....	576. 71

Repairing—

Main sewers—

Rock Creek interceptor.....	\$1, 525. 93
Indiana avenue trunk sewer.....	585. 85
Sixth street sewer.....	1, 068. 73
Miscellaneous main sewers.....	1, 581. 59

 4, 762. 10

Cost—Continued.

Repairing—Continued.

Pipe sewers.....	\$855.61
Reconstructing manholes.....	536.40
Adjusting and repairing manholes.....	210.21
Replacing manhole frames and covers.....	433.06
Filling settlements over sewers.....	89.40
Reconstructing storm-water receiving basins.....	938.55
Repairing storm-water receiving basins, brickwork, etc.....	201.95
Abandoning storm-water receiving basins.....	98.07
Replacing storm-water receiving basin tops.....	330.80
Replacing alley grates and frames.....	185.06
Repairs and maintenance of equipment.....	4,225.12
Abandoning manholes.....	15.70

DIVISION C.—Construction, sewerage system.

[J. R. WHELPLEY and A. D. BLACK, assistant engineers in charge.]

The work of this division includes engineering on sewer construction by day labor and contract for the sewerage system, as well as certain trunk line work for the sewage disposal system. The work for the fiscal year was performed under 30 contracts and 415 day labor jobs, and is described under the various appropriation headings, as follows:

MAIN AND PIPE SEWERS.

From the appropriation for main and pipe sewers there were constructed under contract 280 linear feet of egg-shaped relief sewer in Second street NW. between F and G streets, replacing the old line, which was entirely inadequate. In Thirteenth street NW. between G and I streets a special deep-service sewer 890 feet in length has been constructed to provide adequate depth for the drainage of the business district between New York avenue and K street from Twelfth to Fourteenth streets. To replace the old Missouri avenue outlet sewer between Third and Sixth streets, all of which was in an extremely insanitary condition, the Four-and-a-half street outlet main sewer connecting with the sewage disposal system trunk line has been designed, and the work was placed under contract near the close of the year.

By day labor 152 feet of 6-foot diameter concrete sewer was constructed in Sixth street NW. between H and I streets, replacing a defective and partially collapsed line. Pipe sewers varying in size from 6 to 22 inches and aggregating 4,273 feet in length, and including nine manholes, were constructed on 14 jobs, the average length per job being 305.23 feet and the average cost per job being \$636.24. There were also constructed 95 catch basins and 9 manholes, and 5 catch basins rebuilt, requiring 3,163 linear feet of basin connection, varying in size from 10 to 24 inches. The total number of jobs was 66 and the average cost per job was \$144.65.

SUBURBAN SEWERS.

From the appropriation for suburban sewers the following was constructed under contract: A separate system trunk line extending along Beach drive in Rock Creek Park from Piney Branch to Boulder Bridge was completed, 5,961 feet in length, and the work was under construction as far as Military road. In Blagden avenue and Sixteenth street a trunk service was built, 4,008 feet in length and extending as far north as the Brightwood reservoir. This will provide for drainage east of Rock Creek Park as far north as Military road. In Massachusetts avenue a separate system service main was extended from Observatory circle 2,000 feet westward to Wisconsin avenue. In Arizona avenue 255 feet 8 inches of combined system trunk line was built, closing two gaps in the Arizona avenue trunk sewer, which completed the lower portion of this line. In Connecticut avenue between Klinge road and Newark streets and in right of way east of Ross place between Lowell and Newark streets storm water sewers were constructed to provide for the better drainage of this district. In Rock Creek Church road and Quincy street 825 feet of egg-shaped sewer, forming an extension of the Spring road system, was built, providing combined sewerage system for the southerly portion of Petworth.

A separate system service sewer was constructed in Conduit road from Arizona avenue to New Cut road 5,025 feet in length. The section of the Luzon avenue trunk sewer, 1,835 feet in length, was built through the grounds of the Walter Reed Army Hospital.

In Arkansas avenue between Delafield and Decatur streets 324 feet of 9 foot 3 inch diameter section of the Piney Branch trunk sewer was completed. In the valley north of R street between Rock Creek and Observatory lane 1,756 feet of semicombed system trunk sewer was constructed, with the entire line under contract as far as Observatory lane. Near the end of the year the Luzon avenue trunk sewer from Military road to Army Hospital, and a trunk service sewer in Broad Branch road and Pleasant drive, from Soapstone Branch to McKinley street, were under contract and ready for construction.

By day labor pipe sewers from 15 to 24 inches in diameter, aggregating in length 1,330 linear feet, were constructed at a total cost of \$6,123.37. This work includes the cost of constructing the iron pipe crossing of Piney Branch and Beach drive with the necessary dam and wing walls and the special construction for connection with and for the improvement of the Piney Branch intercepting sewer. In addition, all combined system lines for the sewerage system of the lower Piney Branch Valley were connected directly into the main interceptor, so as to avoid sewage overflow from the various pipe lines into this small stream. Five manholes were constructed, 3 sumps abandoned, a total of 7 jobs, with an average length per job of 190 feet and an average cost per job of \$874.77. An important storm water outlet for the Piney Branch Valley interceptor was designed and constructed at Rock Creek, and one settling basin at this overflow was abandoned. In Arkansas avenue the open channels were improved and the trunk line protected from silting up by stream discharge by the construction of a dam and apron at the entrance. Also 8 feet of 9 foot 3 inch diameter sewer was arched and the line cleared of obstructions.

CONGRESS HEIGHTS TRUNK SEWER.

A separate system trunk sewer for the drainage of Congress Heights from the outfall sewer of the sewage disposal system was constructed under special appropriation as far as the intersection of Trenton and Brothers place 2,670 feet in length and 24 inches in diameter.

FOURTH STREET SE. RELIEF SEWER.

Nine hundred and ten linear feet of this sewer were constructed during the year and the remaining 1,165 feet prepared for construction and placed under contract. The sections constructed are 4 feet 3 inches in diameter and 4 feet in diameter. Connection for this sewer with the Tiber Creek and the New Jersey avenue high level intercepting line, including the shaft 40 feet deep, was also constructed by day labor.

ASSESSMENT AND PERMIT WORK.

Under contract service sewers were constructed as follows: In various streets of Saul's subdivision, 4,691 feet of sewers; in Irving street and Georgia avenue, 987 linear feet; in Nichols avenue between Howard and Sumner streets, 945 feet; in Blagden avenue and Sixteenth street between Decatur and Ingraham streets, 2,608 linear feet; in Cathedral avenue and Twenty-third street, 1,320 linear feet; in Nineteenth street and square No. 2206, 900 linear feet; in New Hampshire avenue and Rock Creek Church road, and Newton street and Georgia avenue, Petworth, 1,095 linear feet; 8 street between Thirty-fifth and Thirty-seventh streets, 774 linear feet; Twenty-fourth street between M and N streets, 409 linear feet; in various streets in Congress Heights, 5,084 linear feet of separate system sewers; in Franklin and Twenty-second streets, Langdon, 1,614 linear feet of separate system. At the close of the year service sewers were also under contract in Tenley and Langdon, none of which had been completed.

DAY LABOR.

Assessment system.—Under the assessment system by day labor, sewers were constructed aggregating in length 30,392.73 linear feet, and varying in size from 8 to 24 inches, including 109 manholes. This work was divided among 131 jobs, the average length per job being 231.5 feet and the average cost per job being \$456.824. From this appropriation by day labor 3 catch basins were rebuilt and 2 adjusted. Also 72 linear feet of 10-inch pipe connection was laid. The work was divided among 7 jobs, averaging in length 10.3 feet per job, and the average cost per job \$55.334.

Permit system.—Under the permit system by day labor there were constructed 4,703.4 linear feet of pipe sewer varying in size from 6 to 24 inches, including 20 manholes and divided among 26 jobs, the average length per job being 180.9 feet and the average cost \$310.32.

MISCELLANEOUS TRUST FUND DEPOSITS.

Under contract the sewer in Fulton street and Tunlaw road between Arizona avenue and Thirtieth street was completed. Also a temporary sewer in right of way across square 2205 was constructed, 399.3 feet in length and costing \$493.59, from the deposit of William M. Kennedy.

By day labor there were built 2,770.5 linear feet of pipe sewer and basin connections varying in size from 6 to 24 inches, and including 18 manholes and 27 catch basins. Also 3 manholes were rebuilt, 16 manholes abandoned, and 14 manholes adjusted. The total cost was \$10,947.80, the number of jobs 37, and the average cost per job \$295.88.

In addition, 10½ feet of 4 foot 6 inch diameter trunk sewer and 288 linear feet of 24-inch diameter pipe sewer, including 2 special manholes and 1 ordinary manhole, were constructed in D street SE. between First and New Jersey avenue at a cost of \$3,513.43, which work was required in connection with the construction of the heating, lighting, and power transmission tunnel for the Capitol buildings, from which the cost was defrayed under the direction of Mr. Elliott Woods, the Superintendent of the United States Capitol Buildings and Grounds.

Barriers were erected and removed from the executive grounds during the inaugural ceremonies at a cost of \$58.83, deposit by the inaugural committee.

ELIMINATION OF GRADE CROSSINGS.

By day labor, 602.4 linear feet of pipe sewers varying in size from 18 to 24 inches in diameter were constructed; also 2,257 linear feet of pipe connection from 6 to 24 inches in diameter, and 34 basins. Five basins were reconstructed and 11 basins abandoned, 13 manholes were reconstructed and 10 adjusted, requiring 29 jobs at an average cost of \$249.94.

In connection with the drainage of the plaza of the new Union Station, two deep wells were constructed at a cost of \$1,376.19.

SEWAGE DISPOSAL SYSTEM.

On the sewage disposal system the construction of the east side interceptor, Section A, between Nineteenth and C streets and Thirtieth and M streets, begun in the previous year, was completed under contract 3825 with E. J. Cartright. Section B, from Hickey's road to Bladensburg road, was built under contract 4092 with the Warren F. Brenizer Company. Section C, from Bladensburg road to Franklin street, under contract 4254 with E. G. Gummel, and Section D, from O street to Hickey's branch, under contract 4313 with the Warren F. Brenizer Company. In addition, Section E in tunnel under the Rhode Island avenue divide was contracted for and the work about to be begun at the close of the year. By day labor the crossing under the valley of Hickey's Run was constructed connecting Sections B and D, and a special flushing gate installed.

The Washington channel branch of the Water and L street interceptor, between L street and the Washington Barracks, was begun under contract 4339 near the close of the fiscal year.

MISCELLANEOUS WORK.

Seven hundred and seventy-seven linear feet of connections from 6 to 15 inches in diameter, 9 manholes, and 41 basins were constructed; 24 basins reconstructed; 13 basins abandoned; and 10 manholes and 5 basins adjusted; total cost, \$4,411.07; number of jobs, 49; average cost per job, \$90.02. The special manhole and inlet section of the Fourth street SE. relief sewer at its junction with the Tiber sewer was constructed at a cost of \$1,011.70.

In connection with the inaugural ceremonies continuous barricades were erected around the Capitol Grounds and along both sides of Pennsylvania avenue from the Capitol to the White House and as far as Pennsylvania avenue and Twentieth street west, cost \$1,928.25.

DIVISION D.—*Operation and construction—Sewage disposal system.*

[L. G. RANDALL, assistant engineer, in charge.]

The work of this division includes engineering and supervision of special construction, the operation and the maintenance of the sewage disposal system, and the management of repair shops, stores, and yards.

Construction.—The following special construction is included in the work for the year. An extension of the sea wall along the Anacostia River front at the sewerage pumping station, 200 feet in length, was begun under contract 4380. By day labor a large regulator chamber was constructed on the Rock Creek and B street interceptor at Twenty-seventh and G streets NW. and equipped with a set of automatic sewage regulators to govern the admission of tide and storm water to the sewage disposal system, as well as with a storm water overflow and provided with a 3-foot diameter flushing gate. These automatic controlling works have now been in use for nearly one year, giving perfect satisfaction and effecting a saving in wages for gate tenders, otherwise required, amounting to 50 per cent of the cost of the installation per annum.

Automatic regulator chambers have also been built and equipped during the year as follows: On the Easby's Point high level interceptor at Twenty-second and Water streets NW., on the east side interceptor at Fourth street, at Sixth street, at Ninth street, at Twelfth street, and at Fourteenth street SE.

On the Water and L street intercepting sewer, regulating connections for intercepting the sewage were constructed and connected with all sewers discharging into the Washington channel between Seventh and Fourteenth streets, by means of which the sewage is excluded from this portion of the city water front and delivered to the sewage disposal system.

At Twenty-first and A streets NE. the connection between the lower section of the east side interceptor and the upper or Brookland section was constructed under the boundary sewer and is ready for service.

In connection with the special features of the equipment for the station, the following work was performed:

The electric overhead conveyor system for the removal of all wastes was completed and placed in operation, successfully handling all materials from the screen and sediment chambers. The 24-inch diameter terra cotta pipe line for the injection water supply from the river to the station was reconstructed for a length of 58 feet with 24-inch diameter wrought-iron pipe incased in concrete. Two duplicate screens were built and installed in the inlet chamber on the river main and connection made with this main in the boiler room for supplying feed water to the boilers. Work was completed on the hydraulic pressure system and the indicators for distance operation of gates and valves, so that all the large valves and gates of the system are now regularly operated from the engine room. The tiling of the engine-room floor was completed and all the paving of roadways around the station. Electric level indicators were under construction to be installed in the engine room to show the level of the flow in the various conduits leading to and from the pumps and the head against which the latter were operating. Under contract 4300 with the Shepherd Engineering Company, of Williamsport, Pa., two 275-kilowatt generator engines were furnished and the engines erected on their foundations in the dynamo room and placed in service.

The various duty trials of the boilers and pumping engines for the 12 large units furnished by the Allis-Chalmers Company for this station were completed during the year. Three hundred and twenty feet of narrow-gauge, cast-iron track was erected in the sediment chamber as part of the cleaning equipment and provided with trucks for the handling and removal of wastes. Two 18-inch diameter motor-driven ventilators were purchased and erected for the improved ventilation of the blacksmith and carpenter shops. The steam piping for Class II number 2 pumping engine was erected and a combined receiver and separator for the steam supply for the dynamo room placed in service. One 4-inch diameter gasoline motor-driven centrifugal pump, mounted on truck, was placed in service for emergency pumping on obstructed lines, one floating derrick built and equipped, and one deck scow built for handling wastes and other materials along the water front.

Test borings for the tunnel section of the east side interceptor under the Rhode Island avenue divide were made in connection with the surveys for this work.

SEWERAGE PUMPING STATION.

[F. K. STEELE, principal steam engineer.]

The sewerage pumping station was operated without interruption of service throughout the year, handling the sewage of substantially the entire District, and delivering

same to the outfall at Grimes on the Potomac River. In addition, the entire rainfall on the low area was pumped and the fixed hydraulic gradients for this service were maintained during the year. The total amount pumped was 810,000,000 gallons of storm water, and of sewage 22,938,000,000 gallons; the following tabulation showing the monthly quantities pumped:

Table showing total pumpage for each month of the fiscal year.

Month.	Sewage pumped.	Storm water pumped.
	<i>Gallons.</i>	<i>Gallons.</i>
July.....	1,918,280,000	71,788,000
August.....	1,972,344,000	112,155,000
September.....	1,872,900,000	37,318,000
October.....	1,992,370,000	37,350,000
November.....	1,919,430,000	13,100,000
December.....	1,977,087,000	79,707,000
January.....	1,982,171,000	62,054,000
February.....	1,747,536,000	68,400,000
March.....	1,903,834,000	103,904,000
April.....	1,856,670,000	58,717,000
May.....	1,944,614,000	82,300,000
June.....	1,850,400,000	83,213,000

During the year pumping service was maintained for the ordinary sewerage system, the special low area deep service and the storm-water system. Seven million eight hundred and sixty-six thousand pounds of coal were consumed, and there were used 1,432 gallons of cylinder oil, 1,261 gallons of crank case oil, 1,799 gallons of coal oil, and 1,911 gallons of gasoline, the two latter items including the oil and gasoline required and used for all purposes for the sewer department during the year; 1,554 pounds of waste were washed and reused and 164 gallons of reclaimed oil from cotton waste also used. The pumping equipment met all requirements of the service for the year.

Shops and yards.—In addition to the ordinary repairs and special equipment constructed for the sewerage pumping station, the various shops handled all the repair work for tools, vehicles, and equipment of the sewer department. In the carpenter and metal shops all wood and metal forms for sewer construction by day labor were made. The special reinforced concrete manufactured for sewer construction included considerable concrete pipe and artificial stone tops for the storm-water receiving basins as follows: 79 corner tops, 109 side tops, 204 cheek blocks, and 160 drip stones.

Tools and miscellaneous supplies for the use of the sewer division were handled at the sewerage pumping station with the storekeeper in charge of the stores and yard. Here all such supplies were received, inspected, and issued. Records are kept on the card system and quarterly reports made covering receipts and issues, the return of unexpendable property and unserviceable property for condemnation and sale.

During the year the assistant engineer's office at the pumping station continued the work on record drawings of the extensive construction and equipment of the sewage-disposal system, in addition to preparing many of the detail drawings for special equipment and new construction as required.

DIVISION E.—*Maps, records, and drafting.*

[T. C. J. BAILY, Jr., assistant engineer in charge.]

The official set of maps of the sewerage of the District of Columbia has been improved by the addition of sheets to cover development in the suburban districts, and also a number of old sheets have been replaced by new maps. On the 50-foot scale sheets of underground public service corporation construction the work has been brought up to date and a number of new sheets added.

A new set of general service sheets showing the building lines, curbs, and street railways, 188 sheets in all, has been completed, a set of negatives of same prepared, and sets of prints from these are now in the course of preparation. A set of 400 feet to the inch topographic maps showing all street extensions made up from the Coast Survey sheets, has been practically completed for use in connection with drainage studies. One hundred foot scale maps covering a large portion of the suburbs for use in detailed studies of drainage have also been prepared.

In addition to the plats for ordinary sewer work a large number of detail plans and drawings have been prepared for special work and for the drainage studies, as well as plans, estimates, and specifications for sewer construction under the various contracts.

DIVISION F.—*Underground construction, public-service corporations.*

[W. S. SHEETS, Inspector in charge.]

This branch of the work assigned to the sewer division, embracing all underground construction of public-service corporations, was reorganized at the beginning of the year on the following basis: The work of all public-service corporations to be regularly inspected during construction; field locations to be made as work progresses; record sheets made showing actual construction and locations in detail; all work to be mapped on a standard set of maps for this purpose; and all work to be recorded on the progressive card system. The work of this division has been efficiently carried on during the year under this organization, the business handled with promptness, and the records kept up to date. The importance of accurate field data on underground construction, taken as the work proceeds and carefully mapped and recorded, justifies the attention given to this service.

The amount of work supervised during the year was exceptional, principally on account of street-railway extensions, and the work in the plaza and approaches at the new Union Station.

The cost of the necessary field inspection on this work is prorated each month among the various companies on the basis of the amount of work of each for the month and charged against their several deposits, and each company is furnished with a detailed monthly statement showing the charge against each location on which work was in progress during the month. The monthly aggregate of these charges is tabulated, as follows:

Public-service corporations.	July.	August.	September.	October.	November.	December.
Washington Gaslight Company.....		\$29.52	\$51.61	\$51.95	\$75.22	\$64.77
Georgetown Gaslight Company.....		93.28	41.63	1.80		
Potomac Electric Power Company.....		14.08	29.97	60.04	37.28	31.15
Chesapeake and Potomac Telephone Company.....	\$104.00	22.88	19.98	26.92	19.42	54.21
Capital Traction Railway Company.....		10.56	21.65	29.78	23.92	18.34
Washington Railway and Electric Company.....			1.66	1.80	.16	.78
Anacostia and Potomac River Railway Company.....				.91		
City and Suburban Railway Company.....				.91		
Board of construction of Capital Traction and Anacostia and Potomac River Railway companies.....						5.00
Western Union Telegraph Company.....	68.00	5.28		5.39		
Total.....	172.00	176.00	166.50	179.50	156.00	174.25

Public-service corporations.	January.	February.	March.	April.	May.	June.	Total.
Washington Gaslight Company.....	\$87.22	\$58.52	\$80.22	\$81.21	\$68.54	\$62.76	\$711.94
Georgetown Gaslight Company.....					29.94	19.19	185.84
Potomac Electric Power Company.....	23.98	13.94	51.28	29.78	44.44	52.38	388.32
Chesapeake and Potomac Telephone Company.....	35.84	63.16	48.00	55.04	20.88	34.56	504.89
Capital Traction Railway Company.....	14.33	2.28		8.32	17.20	5.11	151.49
Washington Railway and Electric Company.....		1.00			1.00	1.00	7.40
Anacostia and Potomac River Railway Company.....	4.00	16.10		2.00			23.01
City and Suburban Railway Company.....							.91
Board of construction of Capital Traction and Anacostia and Potomac River Railway companies.....	9.50	1.00					15.50
Western Union Telegraph Company.....							78.67
Washington Market Company.....				5.65			5.65
Total.....	174.87	156.00	179.50	182.00	182.00	175.00	2,073.62

A detailed statement of the construction of the various companies is given in Tables 12, 13, 14, and 15, which also show a summary of electric conduits, gas mains, etc., laid to date.

The following is a statement of the number of permits for construction during the year upon which permits were granted, locations given, and the work supervised, inspected, and recorded:

Electric conduit construction.

Capital Traction Company.....	10	
Chesapeake and Potomac Telephone Company.....	174	
Potomac Electric Power Company.....	285	
Western Union Telegraph Company.....	4	473

Electric house connections.

Chesapeake and Potomac Telephone Company.....	44	
Potomac Electric Power Company.....	502	546

Manholes constructed and reconstructed.

Capital Traction Company.....	1	
Chesapeake and Potomac Telephone Company.....	9	
Potomac Electric Power Company.....	142	152

Drain connections to public sewers.

Capital Traction Company.....	32	
Chesapeake and Potomac Telephone Company.....	105	
Potomac Electric Power Company.....	39	
Washington Railway and Electric Company.....	9	185

Gas mains.

Georgetown Gaslight Company.....	17	
Washington Gaslight Company.....	156	173

Miscellaneous.

Private vaults in street space.....	56	
Electric connection, 1329 New York avenue, automobile current supply...	1	
Gasoline supply pipe, garage 1628 Sixteenth street NW.....	1	
Fire main water supply crossing alley rear 426 Seventh street NW.....	1	
Refrigerator main, Washington Market Company, Seventh and B streets NW	1	60

1,609

DIVISION G.—Records and accounts.

[J. D. FOLEY, clerk, in charge.]

The methods of record and account were remodeled at the beginning of the year and arranged on the progressive card system, which shows the state of the work at every stage from the beginning until the records are finally closed and completed. This has been of material aid in handling the large number of jobs on day labor work, and an incentive to the prompt dispatch of business, particularly as to the closing of accounts and report on same. While three to four months was formerly the usual time before accounts were reported on, under the present system the average time has hardly exceeded as many days, and this division of the work has been kept as nearly as is practicable up to date at all times.

The system of requisitions for materials also has been much simplified, reducing the clerical cost, and at the same time greatly facilitating the work of the construction foremen, as well as effecting a considerable economy by the avoidance of delay in obtaining necessary construction materials.

The work of this division consists of the preparation of pay rolls, requisitions, transfer vouchers, statements of cost of construction, job cost records, checking and recording of vouchers, transmission of papers, etc. The following is a brief summary of the work for the year:

Vouchers checked and forwarded.....	920
Requisitions made up.....	1,304
Transfer vouchers made up.....	143
Number of jobs.....	1,299
Pay rolls prepared.....	418
Foremen's reports checked, entered, and filed.....	4,180
Tool orders to foremen.....	457
Card records made.....	4,663

MAINTENANCE.

The sewerage system, aside from the many necessary renewals and repairs needed in the older lines, is in excellent condition. The work of maintenance has been very seriously handicapped during the year for want of sufficient funds. As shown by the following tabulation, the total length of sewers requiring maintenance has been increased in twenty years from 266 to 541 miles, yet the appropriation for maintenance has scarcely increased at all.

Year.	Length of sewers.	Appropriation for maintenance.
	<i>Miles.</i>	
1890.....	266.18	\$35,000.00
1891.....	281.68	42,000.00
1892.....	294.76	45,000.00
1893.....	306.82	45,000.00
1894.....	321.45	45,000.00
1895.....	334.68	45,000.00
1896.....	347.93	50,000.00
1897.....	365.42	50,000.00
1898.....	382.83	50,000.00
1899.....	393.01	50,000.00
1900.....	405.50	50,000.00
1901.....	418.75	58,000.00
1902.....	431.62	58,000.00
1903.....	448.04	58,000.00
1904.....	456.82	58,000.00
1905.....	468.81	42,000.00
1906.....	484.35	38,000.00
1907.....	501.44	44,500.00
1908.....	521.18	a 45,000.00
1909.....	541.26	a 48,500.00

a Exclusive of sewage-disposal system maintenance.

CONSTRUCTION.

The greater portion of the increase of population of the District has spread to the extensive areas outside the old city limits, requiring largely increased expenditures for the extension of the sewerage system, yet the necessary reconstruction of old city lines has absorbed so considerable a portion of the appropriation that the work of extending the system has not kept pace with the growth of population. The following tabulation shows the approximate increase in population during fifteen years, and the funds appropriated for construction of the sewerage system each year during the same period:

Year.	Population.	Appropriation for sewerage system. ^a
1894.....	266,000	\$291,210.00
1895.....	270,000	177,500.00
1896.....	274,000	185,300.00
1897.....	277,000	240,000.00
1898.....	279,000	146,000.00
1899.....	281,000	136,000.00
1900.....	284,000	126,000.00
1901.....	289,000	206,000.00
1902.....	295,000	181,000.00
1903.....	302,000	121,000.00
1904.....	313,000	123,000.00
1905.....	323,000	100,150.00
1906.....	326,000	88,000.00
1907.....	331,000	235,000.00
1908.....	339,000	172,800.00
1909.....	343,000	152,000.00

a Excluding maintenance and sewage-disposal system.

The following is a statement of the lengths of main sewers, pipe sewers, and storm-water receiving basins constructed from funds appropriated for the fiscal year of 1909:

Appropriation.	Main sewers.	Pipe sewers.	Storm-water basins.
	<i>Linear feet.</i>	<i>Linear feet.</i>	
Main and pipe sewers.....		4,324.60	98
Suburban sewers.....	2,965.44	25,435.87	
Congress Heights sewer.....		2,670.00	
Fourth street se. relief sewer.....	1,523.80		
Assessment and permit work.....		62,707.71	5
Miscellaneous trust fund deposits.....		2,775.10	30
Elimination of grade crossings.....		2,457.40	38
Sewage disposal system.....	13,406.51	2,472.52	
Cleaning and repairing.....			
Miscellaneous work.....	617.10	900.00	64
Total.....	20,512.85	103,743.20	245

ORGANIZATION.

A general organization of the sewer department has been effected during the year, systematizing the work and greatly increasing the efficiency and economy of administration. It is outlined as follows:

- Division A.—Drainage studies, plans, and engineering data.
- Division B.—Maintenance, sewerage system.
- Division C.—Construction, sewerage system.
- Division D.—Operation and construction, sewage-disposal system.
- Division E.—Maps, records, and drafting.
- Division F.—Underground construction of the public-service corporations.
- Division G.—Records and accounts.

RIGHTS OF WAY ACQUIRED DURING THE FISCAL YEAR ENDING JUNE 30, 1909.

Sewer for valley north of R street, through parcels 39/2,^a 39/5,^a 39/8,^a 39/9,^a 52/2,^b and lot 40 of square 1299.^a

Anacostia main interceptor, through lots in square 5860,^b and through parcels 231/1,^b 231/2,^b and 231/3,^b and also through property of the Baltimore and Ohio Railroad Company.^a

East side interceptor, crossing the Baltimore and Ohio Railroad at Langdon.^a

West side interceptor, through parcel 52/2,^b and through lot 801 of square E of 1264^b and lots 8 and 11 of square 2510.^b

Langdon separate system trunk sewer, through parcel 165/18.^a

Luzon avenue trunk sewer, through parcels 88/2,^a 88/79,^a 89/3,^a 89/11,^a and 87/104.^a

North Columbia Heights separate system trunk sewer, through parcels 84/4,^c 84/5,^c 84/6,^c and square 1195,^a 8 parcels, service sewer.

Congress Heights trunk sewer, through parcels 243/6,^a 243/7,^a 243/8,^a and 243/9.^a

Newark street, Cleveland Park, storm-water sewer through parcel 42/72.^a

Falls branch trunk sewer, through parcel 25/11.^c

Tenleytown separate system service sewer through lot 800 of square 1732.^a

TABLES.

Table No. 1.—Construction by contract.

Table No. 2.—Construction by day labor, permit system.

Table No. 3.—Construction by day labor, assessment system.

Table No. 4.—Construction by day labor, miscellaneous trust-fund deposits.

Table No. 5.—Construction by day labor, main and pipe.

Table No. 6.—Construction by day labor, suburban sewers.

Table No. 7.—Construction by day labor, elimination of grade crossings.

Table No. 8.—Construction by day labor, miscellaneous appropriations.

Table No. 9.—Construction by day labor, sewage-disposal system construction.

Table No. 10.—Inspectors and other temporary employees and appropriations from which paid.

Table No. 11.—Average cost of day labor, sewer and basin construction.

^a Voluntary dedication.

^b Condemnation.

^c Purchase.

- Table No. 12.—Electric conduits laid during the year.
 Table No. 13.—Gas mains laid during the fiscal year.
 Table No. 14.—Summary of electric conduits laid to June 30, 1909.
 Table No. 15.—Summary of gas mains laid to date.
 Table No. 16.—Summary of sewerage system.

RECAPITULATION.

Total length of sewers on June 30, 1909:	Miles.
Main sewers.....	117.24
Pipe sewers.....	424.02
Total.....	541.26
Cost of sewerage system to June 30, 1909.....	\$10,688,681.62
Cost of sewage-disposal system to June 30, 1909.....	\$4,031,888.27

Very respectfully, your obedient servant,

ASA E. PHILLIPS,
Superintendent.

Capt. WILLIAM KELLY,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, District of Columbia.

TABLE NO. 1.—*Statement of sewers constructed under*

No. of contract.	Contractor.	Location.	Size of sewer.	Length of sewer.
				Linear ft.
4090	E. G. Gummel ^a	{ West side of James Creek Canal, between N and P streets, and in P street, between James Creek Canal and Four-and-a-half street.	24-inch.....	709.50
			18-inch.....	378.75
			15-inch.....	347.25
4093	W. F. Brenizer Co. ^a	Fulton street, between Arizona avenue and Tunlaw road, and Tunlaw road, between Fulton and Thirty-ninth streets.	3 feet diameter.....	946.30
4103	E. G. Gummel ^a	Emerson street, between Arkansas and Iowa avenues.	12-inch.....	420.40
4103	.....do. ^a	Georgia avenue, between Emerson and Farragut streets.	.....do.....	390.00
4112	W. F. Brenizer Co. ^a	Arizona avenue, crossing Massachusetts avenue.	6 feet 3 inches diameter.	257.10
4120	James A. Coyle ^a	Massachusetts avenue, between Observatory Circle and Wisconsin avenue.	12-inch.....	2,000.00
4123	R. J. Beall Construction Co. ^a	Arizona avenue, north of Canal road..	9 feet diameter.....	255.19
4125	{ Warren F. Brenizer Co.	{ Irving street nw., between Sherman and Georgia avenues, and Georgia avenue, between Irving and Kenyon streets.	18-inch.....	300.00
			15-inch.....	356.50
			12-inch.....	330.50
4125	.....do.....	Nichols avenue se., between Howard and Sumner roads.	15-inch.....	370.00
4126	.....do. ^a	Connecticut avenue, between Klingie road and Newark street.	12-inch.....	575.00
			24-inch.....	653.32
4126	.....do. ^a	{ Right of way east of Ross place, between Newark and Ordway streets.	4 feet 3 inches diameter.	65.00
			3 feet 6 inches diameter.	190.00
			24-inch.....	400.00
4128	.....do. ^a	Beach drive, between Piney Branch and Pierce Mill roads.	24-inch.....	2,798.85
4129	.....do. ^a	Macomb street, crossing Massachusetts avenue.	3 feet 3 inches diameter.	360.00
4130	.....do. ^a	Blagden avenue, between Beach drive and Decatur street.	18-inch.....	4,000.00
4130	.....do. ^a	Blagden avenue, between Decatur and Sixteenth streets, and Sixteenth street, between Blagden avenue and Ingraham street.	.....do.....	2,608.52
4132	E. J. Cartright ^a	Broad Branch road and southward along Beach drive.	24-inch.....	1,392.75
4133	E. G. Gummel ^a	{ Second street ne., between F and G streets.	3 feet diameter.....	155.00
			2 feet 6 inches diameter.	125.00
			15-inch.....	480.90
4137	R. J. Beall Construction Co. ^a	Twenty-fourth street nw., between M and N streets.	15-inch.....	480.90
4152	{ James A. Coyle	{ Fourth street se., between Pennsylvania and North Carolina avenues, and North Carolina avenue se., between Third and Fourth streets.	4 feet diameter.....	343.00
			4 feet 3 inches diameter.	410.80
			4 feet 6 inches diameter.	6.20
4154	R. J. Beall Construction Co.	Delafield street, between Arkansas and Iowa avenues, and Iowa avenue, between Delafield and Emerson streets.	12-inch.....	780.00
			10-inch.....	280.00
4164	{ E. G. Gummel.....	{ Cathedral avenue, between Connecticut avenue and Woodley road, in right of way across square No. 2205, and in Twenty-third street, between Calvert street and Woodley road.	21-inch.....	636.50
			18-inch.....	284.80
			12-inch.....	399.30
4184	{ James A. Coyle.....	{ Nineteenth street, between Lamont street and Park road, and in alley of square No. 2606.	21-inch.....	21.00
			10-inch.....	50.20
			15-inch.....	243.90
			12-inch.....	585.00

^a Includes work previously reported.^b Work incomplete; no allowance to contractor.

contract in the fiscal year ending June 30, 1909.

Allowance to contractor.	Materials.		Cost of—		Total cost.	Appropriation.
	Charged.	Not charged.	Inspection.	Repairs to pavements.		
\$4,006.37	\$409.71	\$1,050.87	\$156.00	\$116.66	\$5,739.61	Main and pipe sewers, 1908.
3,962.86	1,154.10	17.33	112.00	.....	5,246.29	Deposit of William F. Mat- teson, \$2,000 balance; sub- urban sewers, 1908.
619.29	79.87	102.40	44.00	.....	852.56	Assessment and permit work, 1908.
600.45	83.18	101.52	34.00	66.38	885.53	Do.
3,230.76	1,220.40	15.96	65.00	.....	4,532.12	Grading Massachusetts ave- nue, between Wisconsin and Nebraska avenues.
3,974.74	498.68	686.36	124.00	557.73	5,841.51	Suburban sewers, 1908.
3,065.38	1,347.42	34.99	134.00	.....	4,581.79	Do.
1,931.87	202.50	333.29	40.00	237.24	2,744.90	{ Assessment and permit work, 1908.
1,632.62	180.22	78.98	40.50	63.09	1,995.41	Do.
2,182.22	386.02	540.26	42.00	4.84	3,155.34	Suburban sewers, 1908.
2,053.54	422.94	293.38	64.00	6.02	2,839.88	Do.
5,818.04	937.58	2,195.07	107.13	.....	9,057.82	Do.
1,352.88	582.15	44.02	40.00	.....	2,019.05	Grading Massachusetts ave- nue, between Wisconsin and Nebraska avenues; sub- urban, 1908.
6,092.26	913.50	1,656.80	116.74	167.21	8,946.51	Suburban sewers, 1908.
4,778.23	603.99	1,068.49	94.01	304.06	6,848.78	Do.
2,980.60	617.54	1,027.40	300.62	.....	4,926.16	Sewer in valley of Broad Branch and Soapstone Branch.
4,572.08	894.60	35.57	220.00	206.37	5,928.62	Main and pipe sewers, 1908.
1,234.98	96.44	142.25	121.00	71.04	1,665.71	Assessment and permit work, 1908.
4,577.17	1,549.85	15.93	280.00	1,040.33	7,463.28	{ Fourth street se., relief sewer.
1,665.06	186.86	252.16	78.00	.....	2,182.08	{ Assessment and permit work, 1909.
2,548.42	398.20	671.04	99.00	.....	3,716.66	{ Assessment and permit work, 1909, and deposit of Wil- liam M. Kennedy.
1,477.25	194.03	273.79	100.00	.....	2,045.07	{ Assessment and permit work, 1909.

* Work to be completed fiscal year 1910.

TABLE NO. 1.—Statement of sewers constructed under

No. of contract.	Contractor.	Location.	Size of sewer.	Length of sewer.
4233	R. J. Beall Construction Co.	Arkansas avenue, between Thirteenth and Emerson streets, Crittenden street, between Thirteenth street and Arkansas avenue, Georgia avenue, between Decatur street and Iowa avenue.	12-inch.....	<i>Linear ft.</i> 1,835.20
4234	.....do.....	New Hampshire avenue, between Newton street and Rock Creek Church road, and Newton street, between New Hampshire and Georgia avenues.	21-inch..... 18-inch..... 12-inch.....	456.00 250.00 388.80
4282	.....do.....	Thirteenth street nw., between G and I streets.	18-inch..... 24-inch.....	394.50 494.50
4285	Warren F. Brenizer Co.	Fourteenth street se., between M street and Anacostia River.	5 feet 6 inches diameter.	202.00
4286	.....do.....	S street nw., between Thirty-fifth and Thirty-seventh streets.	18-inch.....	460.60
4296	Lake Stone Co.....	Various streets in Congress Heights...	15-inch..... 12-inch..... 10-inch..... 8-inch.....	313.40 1,689.05 2,453.85 940.61
4297	E. G. Gummel.....	Congress Heights trunk sewers, from outfall sewer to intersection of Brothers and Trenton places.	24-inch..... 21-inch..... 18-inch.....	1,100.00 700.00 870.00
4308	Warren F. Brenizer Co.	Rock Creek Church road, between Warder and Fifth streets, and Fifth street, between Rock Creek Church road and Quincy street.	2.50 by 3.75 feet, egg-shaped.	824.95
4312	.....do.....	Franklin street ne., between Twentieth and Twenty-fourth streets, and Twenty-second street, between Franklin and Everts streets.	15-inch..... 12-inch..... 10-inch.....	74.30 1,155.37 384.83
4314	.....do.....	In United States Government strip, between Arizona avenue and Conduit road, and in Conduit road, between Foxhall and New Cut roads.	24-inch..... 21-inch..... 18-inch.....	2,064.55 1,361.93 1,699.30
4321	.....do.....	Arkansas avenue, between Delafield and Decatur streets.	9 feet 3 inches diameter.	324.00
4351	Warren F. Brenizer Co.	In grounds of Walter Reed Army General Hospital.	18-inch.....	1,834.50
4352	.....do. ^a	Valley north of R street, between Rock Creek and Observatory lane.	24-inch..... 21-inch..... 18-inch.....	1,136.30 299.70 326.50
4354	George Hyman ^a	Second street se., between Virginia and South Carolina avenues; in South Carolina avenue; between Second and Third streets; and in Third street se., between North Carolina and South Carolina avenues.	4 feet 6 inches diameter.	150.00
4356	Warren F. Brenizer Co. ^a	In right of way in line of Davenport street, between River road and Forty-third street nw.; in right of way in line of Forty-third street, between Davenport and Fessenden streets; and in Fessenden street, between Forty-third street and Wisconsin avenue.	18-inch.....	1,609.40
4364	E. G. Gummel ^{a b}	Beach drive, between Broad Branch and Military road.	.....do.....	1,770.00
4378	.....do. ^{a b}	River road, between Davenport and Chesapeake streets; in Chesapeake street, between River road and Wisconsin avenue; and in Wisconsin avenue, between Chesapeake and Brandywine streets.	.....do.....	.....
4378	.....do. ^{a b}	Fessenden street, between Wisconsin avenue and Forty-first street; in Forty-first street, between Fessenden and Davenport streets; in Davenport street, between Forty-first street and Belt road; and in Belt road, between Davenport and Chesapeake streets.	.....do.....	.....

^a Work incomplete; no allowance to contractor.

contract in the fiscal year ending June 30, 1909—Continued.

Allowance to contractor.	Materials.		Cost of—		Total cost.	Appropriation.
	Charged.	Not charged.	Inspection.	Repairs to pavements.		
\$2,937.56	\$339.55	\$458.38	\$150.25	.....	\$3,885.74	Assessment and permit work, 1909.
1,970.26	240.75	478.43	77.25	.....	2,766.69	Do.
2,472.35	289.55	554.26	126.75	\$816.13	4,259.04	Main and pipe sewers, 1909.
1,647.22	853.99	.....	192.00	.....	2,693.21	Do.
1,287.13	159.75	293.05	38.50	58.33	1,836.76	Assessment and permit work, 1909.
10,982.38	1,276.51	1,799.63	661.50	.....	14,720.02	Do.
4,455.07	747.27	1,611.13	208.00	.....	7,021.47	Trunk outlet sewer, Con- gress Heights.
4,381.86	1,345.00	64.66	87.50	64.56	5,943.58	Suburban sewers, 1909.
2,963.89	302.28	405.91	180.00	173.59	4,025.67	Assessment and permit work, 1909.
10,284.06	1,600.50	3,257.10	375.00	341.63	15,858.29	Suburban sewers, 1909.
4,399.22	1,943.81	.44	264.00	.....	6,607.47	Do.
2,078.59	453.66	757.86	108.00	.....	3,398.11	Do.
.....	.....	.....	136.00	.....	.....	Suburban sewers, 1910.
.....	.....	.....	140.00	.....	.....	Fourth street se. relief sewer.
.....	.....	.....	92.00	.....	.....	Suburban sewers, 1910, and assessment and permit work, 1909.
.....	.....	.....	64.00	.....	.....	Suburban sewers, 1909.
.....	.....	.....	.....	.....	.....	Assessment and permit work, 1909.
.....	.....	.....	.....	.....	.....	Do.

^b Work to be completed fiscal year 1910.

TABLE NO. 1.—*Statement of sewers constructed under*

No. of contract.	Contractor.	Location.	Size of sewer.	Length of sewer.
				<i>Linear ft.</i>
4378	E. G. Gummel ^a	Twenty-sixth street ne., between Everts and Irving streets; in Irving street, between Twenty-fourth and Twenty-sixth streets; and in Twenty-fourth street, between Irving street and Rhode Island avenue.		
4381	Warren F. Brenizer Co. ^a	Missouri avenue, between Third and Sixth streets, and in Four-and-a-half street, between Missouri and Maine avenues.		
4382	.....do. ^a	In right of way from Military road and Rock Creek to Walter Reed Hospital.		
4384	.....do. ^a	Broad Branch road and Pleasant drive, between Soapstone Branch and McKinley street.		
				52,470.67

^a Work to be completed fiscal year 1910.

contract in the fiscal year ending June 30, 1909—Continued.

Allowance to contractor.	Materials.		Cost of—		Total cost.	Appropriation.
	Charged.	Not charged.	Inspection.	Repairs to pavements.		
						Assessment and permit work, 1909.
						Main and pipe sewers, 1909.
						Suburban sewers, 1909.
						Do.
\$114,216.66	\$22,512.40	\$20,325.71	\$48,312.75	\$4,295.21	\$166,220.73	

b Further repairs to pavements pending

TABLE NO. 2.—Statement of sewers laid under the appropriation for

No. of order.	Location.	Pipe sewers laid (length in feet).				Man-holes built.	Branches.
		8 in.	10 in.	12 in.	24 in.		
1	T street, between North Capitol and First nw., south side.		33				2
2	Square 1042.		136				
3	Georgia avenue nw., between Webster and Allison streets.		156	51		2	6
4	Square 1195, right of way.		162			1	11
5	Square 2154, R street nw., near Wisconsin avenue.		55				2
6	Square 2835, abutting lots 76 to 83.		210	120		2	8
7	Sixteenth street se., between Cand D.		64.5			1	4
8	M street nw., east of New Hampshire avenue.		50				2
9	Square 2836, abutting lots 16 to 23.		287.5	31		2	9
10	Square 899, abutting lot 44.		10				1
11	Square 289, abutting lot 17.			35			1
12	Fourteenth street nw., between Arkansas avenue and Webster street.			221.4		2	
13	Webster street nw., between Fourteenth and Fifteenth.			550		1	
14	Webster street nw., west of Fifteenth.		234.5				1
15	Square 161, abutting lot 10.		84			1	
16	Square 855.		116.5		67.5	2	
17	Square 1062, abutting lot 113.			21			1
18	Square 19, abutting lot 5.			58			4
20	Florida avenue ne., east of Thirtieth.		40			1	
21	Fifteenth and Water streets sw.			60	143		2
	Albemarle street nw., east of Connecticut avenue.		398.5			1	1
22-24	Albemarle street nw., between Connecticut avenue and Thirtieth street.		472			1	
	Albemarle street nw., east from Thirtieth street.		198				
25	Square 175.		260			1	10
26	Ninth street nw., between G and Grant streets.			202		1	
27	A street se., between Sixteenth and Seventeenth.		118			1	2
	Total.	354.5	2,802	1,395.9	143	20	67

^a Twenty-seven feet of 6-inch pipe sewer also constructed.^b Awaiting bill for repairs to pavements.

assessment and permit work (permit system), fiscal year ending June 30, 1909.

Amount of deposit.	Cost to District of Columbia.	Cost to depositor.	Total cost.	Amount returned.	For whom done.	Foreman.	Date of completion.
\$40.00	\$24.08	\$24.08	\$48.16	\$15.92	J. L. Warren.....	J. Lani-gan.	Aug. 21, 1908
170.00	169.93	169.92	339.85	.07	C. A. Didden & Sons.....	W. J. Ward	Oct. 28, 1908
275.00	238.42	238.42	476.84	36.58	Terrell & Little.....	do.....	June 8, 1909
225.00	154.43	154.42	308.85	70.58	Thomas J. Stanton ^a	do.....	July 9, 1909
50.00	48.34	48.34	96.68	1.66	Harry Wardman.....	do.....	Mar. 17, 1909
250.00	224.93	224.92	449.85	25.08	do.....	T. Lani-gan.	Apr. 8, 1909
90.00	59.50	59.49	118.99	30.51	W. E. Pickford.....	W. J. Ward	Apr. 1, 1909
45.00	39.83	39.82	79.65	5.18	W. W. Chiswell and H. A. Kite.	do.....	Mar. 12, 1909
310.00	187.07	187.06	374.13	122.94	George C. Pumphrey.....	T. Lani-gan.	Apr. 16, 1909
15.00	8.67	8.66	17.33	6.34	B. Stanley Simmons.....	W. J. Ward	June 8, 1909
40.00	32.56	32.55	65.11	7.45	do.....	do.....	Apr. 13, 1909
250.00					A. W. Machen ^b	do.....	
500.00					do. ^b	do.....	
250.00					do. ^b	do.....	
125.00					Sophie C. Johnston ^b	T. Lani-gan.	
175.00	156.36	156.36	312.72	18.64	W. H. Michael ^b	do.....	Sept. 8, 1909
20.00	10.76	10.75	21.51	9.25	Thomas H. Melton.....	do.....	May 18, 1909
60.00	60.00	60.00	120.00		L. J. Mangan ^b	do.....	Oct. 9, 1909
30.00	30.00	30.00	60.00		Walter A. Dowd.....	do.....	June 22, 1909
275.00	274.96	274.96	549.92	.04	T. F. Rowland.....	W. J. Ward	June 29, 1909
					Jesse P. Crawford.....	do.....	
1,000.00	1,151.54	1,151.54	2,303.08		do. ^c	do.....	
325.00					do.....	do.....	
400.00	248.11	248.10	496.21	151.90	John Morris ^{b,c}	do.....	Sept. 8, 1909
125.00	86.76	86.76	173.52	38.24	Victor J. Evans ^b	do.....	Sept. 23, 1909
					George A. Gray.....	T. Lani-gan.	
5,045.00	3,206.25	3,206.15	6,412.40	540.38			

^c Work completed in fiscal year 1910.

TABLE NO. 3.—Statement of sewers laid under the appropriation for assessment

No. of order.	Location.	Pipe sewers laid (length in feet).					
		8- inch.	10- inch.	12- inch.	15- inch.	18- inch.	24- inch.
100	Fourth and Shepherd streets and Illinois avenue and Taylor streets nw			235.5			
101	Square 3313		595.2				
102	Kalorama avenue nw., between Champlain avenue and Eighteenth street			125.5			
103	Oak street, between Holmead place and Fourteenth street nw			370			
104	Square 3038 and in Newton street, between alley and Warder street			120.5			
105	Channing street nw., between First and North Capitol streets			426			
106	Meridian street nw., between Fourteenth street and Holmead place			361			
107	Square 1030		118.5				
108	Square 3070		90				
110	G street ne., between Fourth and Fifth streets		129.5				
111	N street ne., between North Capitol and First streets			290	47		
112	First street nw., between T and Seaton streets		107				
113	Twelfth street ne., between Franklin and Girard streets			80			
114	Second street nw., between Thomas and U streets			31			
115	Shannon place se., between Franklin and Chicago streets			189			
116	Jackson street se., between Taylor and Fendall streets			66			
117	Fifteenth street ne. between F and G streets			349			
118	Fairmount avenue nw., between Eleventh street and Sherman avenue		136.5				
119	Fourteenth street nw., between Park road and Monroe street			88			
120	Nichols avenue se., south from Sumner road			332			
121	Kalorama road nw., between Eighteenth street and Columbia road			135			
122	E street nw., between Third and Fourth streets			52.4			
123	Georgia avenue and Allison street nw			116			
124	Fourteenth street, between Emerson and Farragut streets nw			239.7			
125	Square 70		78.5				
126	Rhode Island avenue nw., between North Capitol and First streets		109.5				
127	First street nw., between S and Seaton streets			6.5			
128	E street ne., between Eighteenth and Nineteenth streets						
129	Fourth street ne., between Quackenbos and Rittenhouse streets			429			
130	Half street sw., between P street and Potomac avenue			429.7		171.5	
131	N street nw., between Seventh and Eighth streets	128					
132	P street nw., between Twenty-first and Twenty-second streets			178			
133	Square 540	41.1					
134	Kalorama road and Champlain avenue nw		6				
135	Third street nw., between B and C streets	206.3					
136	Square 273			116.3			
137	Adams street se., between Jackson and Harrison streets			262			
138	Fourth street ne., between M and N streets		126		294		
139	Ames street ne., between Fourteenth and Fifteenth streets			40			
140	I street nw., between Twelfth and Thirteenth streets			163.4			
141	Eighth street ne., between L street and Florida avenue						
142	Eleventh and Otis streets nw	288					
143	Fourteenth street nw., between Newton and Meridian streets	3					
144	Quincy street nw., between Fourteenth street and Cedar road	181			48		
		156					

a Work started in fiscal year 1908.

OPERATIONS OF ENGINEER DEPARTMENT, D. C.

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and permit work (assessment system) fiscal year ending June 30, 1909.

Man-holes built.	Basins.			Branches.	Cost of—				Total cost.
	Built.	Re-built.	Ad-justed.		Material.	Labor.	Contingencies.	Repairs to pavements.	
2					\$139.22	\$326.41	\$23.28		\$488.91
2				32	247.07	561.39	40.42		848.88
				5	55.07	276.03	16.56		347.66
1				10	138.22	439.53	28.89		606.64
1					63.49	230.78	14.71		308.98
2				15	224.35	567.35	39.59	\$10.20	841.49
2				17	202.44	788.45	49.54		1,040.43
				3	41.59	205.81	12.37	3.48	263.25
				4	28.26	177.14	10.27	84.58	300.25
				6	43.38	244.28	14.38	14.64	316.68
2					184.72	722.82	45.37	9.59	962.50
1				4	46.30	181.20	11.38		238.88
				1	32.62	142.03	8.73	12.28	195.66
				2	13.72	39.46	2.66		55.84
					80.58	331.30	20.59		432.47
					21.83	97.41	5.96		125.20
1					157.73	370.57	26.42	50.40	605.12
				4	43.42	183.03	11.32	4.51	242.28
1				2	56.65	216.90	13.68		287.23
3					191.46	919.25	55.54	8.28	1,174.53
					56.63	165.83	11.12	63.44	297.02
1				1	21.95	80.06	5.10	12.60	119.71
					68.94	270.67	16.98		356.59
1				1	111.96	452.02	28.20		592.18
					26.57	90.03	5.83	14.28	136.71
				5	35.86	190.34	11.31		237.51
1				1	23.03	37.31	3.02		63.36
						9.44	.47		9.91
1					206.90	687.16	44.70		938.76
2					300.42	827.24	56.38		1,184.04
				1	36.61	192.93	11.48		241.02
1					95.59	320.32	20.79		436.70
				4	14.40	54.64	3.45	23.45	95.94
					9.68	40.75	2.52		52.95
1			1		83.02	258.62	17.08	9.74	368.46
1				7	64.33	128.00	9.62	91.77	293.72
					126.60	535.11	33.09		694.80
2					228.93	910.54	56.97		1,196.44
					16.78	50.12	3.35		70.25
2					108.41	510.84	30.96	79.89	730.10
1				9	111.29	492.36	30.18		633.83
					13.11	28.56	2.08		43.75
2			1		124.69	313.89	21.93		460.51
				8					
				7	50.80	181.43	11.61		243.84

TABLE NO. 3.—Statement of sewers laid under the appropriation for assessment

No. of order.	Location.	Pipe sewers laid (length in feet).					
		8- inch.	10- inch.	12- inch.	15- inch.	18- inch.	24- inch.
145	Second and Bryant streets nw.						
146	Square 3101.		132				
147	Bryant street, between Second and Fourth streets nw.				426		
149	Rittenhouse street nw., between Fourth and Fifth streets.		147.5	458			
150	Square 68.	194					
151	Ninth street ne., between E and F streets.			146			
152	Channing street nw., between First and North Capitol streets.			245			
153	Otis street nw., between Thirteenth street and Holmead place.			160			
155	Lamont street nw., between Eighteenth and Nineteenth streets.		280.4	340.6	70		
156	Twenty-second street se., between Minnesota avenue and R street.		234				
157	do.		463				
158	do.		454				
159	do.		181				
160	Square 870.		276.5				
161	Half street sw., between Q street and Potomac avenue.		140				
162	Square 2607.			375			
163	A street se., between Fifteenth and Sixteenth streets.			120.3			
164	Shannon place se.			385			
165	Thirteenth street ne., between Girard and Hamlin streets.	377.6					
166	Lincoln road ne., between Todd place and Rhode Island avenue.			83.9			121.5
167	Rosedale street ne., between Eighteenth and Nineteenth streets.		249				
168	K street ne., between Eighth and Ninth streets.			91.6			
169	Ninth street nw., between Taylor and Upshur streets.		104				
170	A street se., between Thirteenth and Fourteenth streets.		145				
171	School street nw., between Lamont and Irving streets.			266			
172	Benning road, between Nineteenth and Twenty-second streets.				486		
173	B street ne., between Fifteenth and Sixteenth streets.			200			
175	Fifth street nw., north of V street.						
177	Twenty-fifth street se., between Q and R streets.		231.5				
178	Square 374.	23.5					
180	Railroad avenue, between Navy avenue and Chicago street se.			229.5			
181	Fourteenth street ne., between C and D streets.			141.5			
182	Seventh street ne., between F and Morris place.	41					
183	Square 4511 and Benning road.		371.2				
185	Tennessee avenue ne., between B and C streets.			449			
186	Square 2921 and Iowa avenue, between Decatur street and Delafield place.		260				
187	Decatur street, between Iowa and Arkansas avenues.		387				
188	Squares 2921 and 2922.			497.7			
189	Decatur street nw., east from Thirteenth street.		256	150			
190	Park road nw., between Seventeenth and Eighteenth streets.			77.5			
191	Square 1020.		108.5				
192	Keefer place nw., between Georgia avenue and Sixth street.		243.5	262			
194	Square 2803.		116.4				
195	do.		62.5				
196	Georgia avenue nw., between Kenyon and Lamont streets.		112.0	336.1			
198	Square 253.		108				
199	Nicholson street, between Prout and Minnesota avenues se.		399.5				

and permit work (assessment system) fiscal year ending June 30, 1909—Continued.

Man-holes built.	Basins.			Branches.	Cost of—				Total cost.
	Built.	Re-built.	Ad-justed.		Material.	Labor.	Contingencies.	Repairs to pavements.	
1		1		3	\$56.37	\$4.52 157.95	\$0.23 10.72	\$104.65	\$4.75 329.69
1				7	274.25	810.90	54.26		1,139.41
1					182.87	641.51	41.22		865.60
2				5	86.42	251.17	16.88	126.99	481.46
1					71.23	322.17	19.67	16.78	429.85
1					119.96	429.62	27.48		577.06
					61.13	263.10	16.21		340.44
3					299.07	1,080.04	68.95		1,448.06
1				3	89.58	177.50	13.35		280.43
1					146.76	533.60	34.02		714.38
				2	133.14	183.20	30.82	19.16	366.32
1				1	76.53	235.59	15.61		327.73
2				2	129.43	371.69	25.06	191.94	718.12
				2	40.57	126.10	8.33		175.00
1					159.07	632.67	39.59	2.12	833.45
					45.08	146.56	9.58		201.22
1					164.96	533.49	34.92		733.37
1				7	118.68	617.88	36.83		773.39
2					204.29	574.90	38.95	27.11	845.25
1				4	95.50	279.51	18.76		393.86
1				4	54.69	129.50	9.21		193.40
				2	33.22	146.40	8.98	23.02	211.62
1				17	62.60	207.86	13.52		283.98
1					105.99	457.14	28.16	38.48	629.77
1					258.42	783.34	52.09		1,093.85
					70.95	275.28	17.31		363.54
			1		12.60	27.17	1.99		41.76
				4	68.34	300.20	18.43		386.97
				3	7.53	27.90	1.77		37.20
1					103.53	423.10	26.33		552.96
					55.37	186.54	12.09		254.00
				2	17.41	36.24	2.68		56.33
2					100.49	424.80	26.26	151.19	702.74
				1	207.45	517.78	36.26		761.49
2				5	109.15	237.86	17.35		364.36
1					154.42	334.97	24.47		513.86
1				2	196.58	517.25	35.69		749.52
					125.68	304.55	21.51		451.74
1				2	52.19	151.20	10.17		213.56
1				2	47.81	128.61	8.82	56.81	242.05
2				24	226.82	378.65	30.27		635.74
1				5	66.45	120.44	9.34		196.23
1				2	31.91	58.76	4.53		95.20
2				12	195.99	565.16	38.06	83.92	883.13
1				9	46.60	109.51	7.81	33.47	197.39
				15	140.14	264.06	20.21		424.41

TABLE NO. 3.—Statement of sewers laid under the appropriation for assessment

No. of order.	Location.	Pipe sewers laid (length in feet).					
		8- inch.	10- inch.	12- inch.	15- inch.	18- inch.	24- inch.
200	Nicholson street se., between Railroad avenue and Prout street.			513.5			
201	Cathedral avenue nw., square 2205 to Woodley road					250	
202	do.			556			
203	do.			467			
204	Fourth street ne., between T and V streets.		184.5				
205	Adams street nw., between Flagler and Second streets.		108.5		6		
207	U street se., between Sixteenth and Eighteenth streets.			187.6			
208	Spring road nw., between Fourteenth street and Cedar road.		255				
209	Eleventh street nw., north of Harvard street. ^a		161.5				
210	Elliot place nw., between Clark place and Conduit road.			540.1			
211	Clark place nw., west from Elliot place.		307.1				
212	Elliot place nw., between Clark place and Conduit road.					60	
213	Trenton street se., between Raleigh and Brotners place. ^b					228.5	
214	Seventh street nw., north of P street.			114.4			
215	A street se., between Fifteenth and Sixteenth streets.			114			
216	Eleventh street nw., south from Euclid street.			146			
217	V street nw., between North Capitol and First streets.			149			
218	Square 2204.		216				
219	Webster street and Kansas avenue nw. ^a		755.4				
220	Georgia avenue nw., between Randolph and Shepherd streets.		222.3				
221	B street se., between Eighth and Ninth streets.		16				
222	Square 3016.		217				
223	Twelfth and E streets nw.		30				
224	Twenty-seventh street, between Garfield street and Cathedral avenue.			450			
225	Twenty-seventh street, between Garfield street and Woodley road.			332.5			
226	Woodley road, between Twenty-seventh street and Connecticut avenue.						281
227	do.						448
228	Newark street nw., east of Thirty-third street.	100					
229	Square 1042.						
230	Seventh street nw., between Randolph and Shepherd streets.			158			
231	S street nw., between Thirty-sixth and Thirty-seventh streets. ^c						
232	Square 2558.			205.4			
233	Twenty-third street nw., south of Woodley road.			23.5			
234	Adams street nw., between Second and Flagler streets.		104.8				
235	Third street nw., between Pennsylvania avenue and C street.		185.5				
238	East Capitol street, east of Thirteenth street.		89				
239	Square 253.			55.4			
240	Jefferson street se., between Pierce and Adams. ^a			321			
241	New York avenue nw., between Seventeenth and Eighteenth streets. ^d			55			
243	Fifth and I streets ne., northeast corner.		6				
244	Fourteenth street and Pennsylvania avenue se., northwest corner.		27				
248	Squares 3042 and 3046.			355.3			
249	Irving street nw., between Warder and Soldiers' Home.						
251	Wisconsin avenue nw., between Quebec and Porter streets. ^d				253	130	
			230				

^a Awaiting bill for repairs to pavements.^b \$160.14 of cost charged to appropriation for Congress Heights trunk sewer.

and permit work (assessment system) fiscal year ending June 30, 1909—Continued.

Man-holes built.	Basins.			Branches.	Cost of—				Total cost.
	Built.	Re-built.	Ad-justed.		Material.	Labor.	Contingencies.	Repairs to pavements.	
2				5	\$213.83	\$366.47	\$29.02		\$609.32
1					160.29	346.83	25.36		532.48
				5	211.08	720.11	46.56		977.75
2				15	205.29	489.05	34.72		729.06
				4	56.02	160.01	10.80		226.83
1					60.96	107.37	8.42	\$7.27	184.02
2					99.83	292.63	19.62		412.08
2				11	90.22	333.80	21.20		445.22
1				1	63.47	153.89	10.87		
1				5	261.71	858.64	56.02		1,176.37
1				1	137.98	392.31	26.51		556.80
					41.00	60.25	5.06		106.31
					129.23	536.25	33.27		698.75
1				4	66.71	156.26	11.15	16.92	251.04
1				7	66.18	149.50	10.78		226.46
1				4	77.96	257.97	16.79	60.96	413.68
2				6	79.65	170.00	12.48		262.13
1				2	75.72	294.45	18.51		388.68
5				7	309.56	668.69	48.91		
				5	59.36	188.63	12.40	87.42	347.81
				1	5.68	14.41	1.00		21.09
				2	58.44	315.83	18.71		392.98
2	2				47.78	62.27	5.50		115.55
				12	216.43	487.39	35.19		739.01
					122.70	337.31	23.00		483.01
				1	299.28	508.00	40.36		847.64
1					490.46	455.67	47.31		993.44
				2	25.68	117.87	7.18	30.66	181.39
1					18.04	8.50	1.33		27.87
1				3	78.66	184.80	13.17		276.63
						55.55	2.78		58.33
1				1	109.59	241.61	17.56	141.00	509.76
				2	9.25	21.61	1.54		32.40
				5	31.90	98.45	6.52	47.28	136.87
1				3	78.83	205.82	14.23		346.16
				5	28.70	97.03	6.29		132.02
				4	32.31	98.55	6.54	57.62	195.02
					123.56	510.70	31.71		
				1	19.77	51.87	3.58		75.22
		1			13.62	37.62	2.56		53.80
					24.60	46.62	3.56		74.78
4					202.23	398.39	30.03		630.65
1				10	225.05	352.78	28.89		606.72
				1	71.22	298.66	18.49		388.37

^c Repaired roadway over sewer trench.

^d Work to be completed in fiscal year 1910.

TABLE No. 3.—*Statement of sewers laid under the appropriation for assessment*

No. of order.	Location.	Pipe sewers laid (length in feet).					
		8- inch.	10- inch.	12- inch.	15- inch.	18- inch.	24- inch.
254	Seventeenth street se., north of Good Hope road.....		14.3				
255	Kalorama road between squares 2526 and 2527.....			80.5			
265	Otis street nw., east of New Hampshire avenue ^a		243				
266	New Hampshire avenue nw., between Park road and Newton street.....			171			
268	Kent Place ne., between Ninth and Tenth streets ^b		100				
269	Third street nw., between Pennsylvania avenue and C street.....		26				
Total		1,111.5	11,086.1	25,681.2	1,630.0	840.0	850.5

^a Work to be completed in fiscal year 1910.

and permit work (assessment system) fiscal year ending June 30, 1909—Continued.

Man- holes built.	Basins.			Branches.	Cost of—				Total cost.
	Built.	Re- built.	Ad- justed.		Material.	Labor.	Contin- gencies.	Repairs to pave- ments.	
				1	\$5.08	\$49.47	\$2.73	.....	\$57.28
				1	30.41	70.14	5.02	.....	105.57
					70.15	116.63	9.34	.....	196.12
				5	64.91	152.62	10.88	.....	228.41
						113.32	5.67	.....	118.99
				1	9.14	38.82	2.40	.....	50.36
110	3	2	3	439	14,035.45	41,588.71	44,384.86	\$1,817.90	58,316.85

^b Work to be completed in fiscal year 1910; all material charged to 1910.

TABLE NO. 4.—Statement of sewers laid under miscellaneous

No. of order.	Location.	Pipe sewers laid (length in feet).							
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch. Branches.
300	Pennsylvania avenue nw., between Twelfth and Thirteenth streets, south side.				104				1
301	Canal and H streets sw., northwest corner.				9	15			
302	Square 711.			18					1
303	Square 1244, lot 16.			53					
304	T street nw., between North Capitol and First streets.			9					
305	Massachusetts avenue nw., between North Capitol and First streets, north side.								
306	Square 3001.		23						1
309	Square 2606 and Nineteenth street ^a .								
310	Square 436, lot 27.			5					1
311	G street, at North Capitol street and Massachusetts avenue nw. ^b								
312	Harrison street, near Monroe street, Anacostia ^c .								
313	F street nw., between Fourteenth and Fifteenth streets, north side.				100				2
313	F street nw., between Fourteenth and Fifteenth streets. ^c								
314	New Jersey avenue and G street nw.						178.3	13.7	
315	Union Station Plaza ^d .								
542	do.			30	9		186		69
561	New Jersey avenue and H street nw.				21				
562	do.				6				
567	Thirteenth and Emerson streets nw., all corners.					45		428	
568	Arkansas avenue and Emerson street, northeast and southeast corners.					21		12	
569	Delafield place at Thirteenth street and Arkansas avenue nw.							156	
570	Decatur street at Thirteenth street and Arkansas avenue nw.							262	
571	(e)								
574	D street se, between New Jersey avenue and First street. ^f								288
1037	Cleveland Park.		99.1						1
1038b	Fifteenth street nw., north of New York avenue ^g .	15							
1038c	Pennsylvania avenue nw., various locations ^h .								
1038d	White House grounds ⁱ .								
1042	North Carolina avenue se., east of First street, south side. ^j			24					
1043	Florida avenue and Eckington place ne. and New York avenue, east of First street. ^j			78					
1045	G street at Massachusetts avenue nw., north side.			48					
1049	Florida avenue, New Jersey avenue nw., to Eighth street ne.			114					
1050	Twenty-ninth street nw., south from Cathedral avenue.		175						2
1054	Newton street ne., between Fourteenth and Fifteenth streets.	94							
1056	Florida avenue nw., east of Sixth street ^j .								
1061	H street ne., between First and Second streets.	9							
1062	First street se., at D and north of North Carolina avenue. ^j			36					
1063	Square 1035, Lot 71.								
1073	First and L streets se., northeast and southwest corners.								
1075	First street se., north of E street ^j .			6					
1077	R street nw., east of Florida avenue ^j .			6					
1337	New Jersey avenue and Warner street nw.								
1040	(k)								
	Total.	118	297.1	427	249	81	364.3	871.7	357 ⁹

^a Cleaned sewer.^b Repaired North Capitol street sewer.^c Abandoned sewer.^d Furnished 8 alley grates and frames No. 2.^e Furnished 16 concrete basin tops.^f 10.5 feet of 4-foot 6-inch sewer reconstructed.

trust-fund deposits, fiscal year ended June 30, 1909.

Manholes.		Basins.		Amount of deposit.	Cost of work.	Amount re-returned.	For whom done.	Foreman.	Date of completion.
Built.	Rebuilt.	Adjusted.	Abandoned.						
Built.	Rebuilt.	Adjusted.	Abandoned.						
1				\$440.00	\$403.60	\$36.40	Henry Schneider.....	W. J. Ward.	Oct. 8, 1908
			1	110.00	108.70	1.30	Geo. F. Huff.....	T. Lanigan.	July 30, 1908
1			1	267.02	267.02		Balto. & Ohio R.R. Co.	do.	Aug. 11, 1908
				40.00	35.79	4.21	M. W. Waters.....	W. J. Ward.	Sept. 5, 1908
				120.00	96.90	23.04	J. L. Warren.....	do.	Aug. 20, 1908
			1	50.00	45.17	4.83	F. L. Wagner.....	do.	Sept. 9, 1908
				60.00	32.45	27.55	A. W. Felka.....	do.	Oct. 2, 1908
				40.00	31.50	8.50	J. A. Coyle.....	A. Robinson.	Oct. 17, 1908
				30.00	12.18	17.82	Chas. W. Weitzell.	T. Lanigan.	Oct. 20, 1908
					19.33		City and Suburban R. R. Co.	W. J. Ward.	Nov. 3, 1908
1					46.46		Washington Railway and Electric Co.	T. Lanigan.	Nov. 10, 1908
1				380.00	291.31	87.64	W. P. Lipscomb & Co.	W. J. Ward.	Feb. 9, 1909
					1.05				Jan. 2, 1909
2			2	520.00	516.80	3.20	Washington Railway and Electric Co.	W. J. Ward.	Dec. 3, 1908
					45.78		Washington Terminal Co.		Dec. 8, 1908
1			1	1,019.84	1,019.78	.06	Capital Traction Co.	W. J. Ward.	Oct. 24, 1908
2				130.00	127.42	2.58	do.	T. Lanigan.	Feb. 8, 1909
1			1	135.00	112.75	22.25	do.	do.	Dec. 2, 1908
			4		946.11		B. F. Saul & Co.	do.	Jan. 20, 1909
			2		100.93		do.	do.	Jan. 25, 1909
			5	2,280.00	389.77	146.39	do.	do.	Feb. 12, 1909
			5		570.62		do.	do.	Mar. 11, 1909
					126.18		do.	do.	
				3,513.43	3,513.43		Superint'd't Capitol Bldg. and Grounds.	W. J. Ward.	Feb. 11, 1909
				300.00	289.00	11.00	I. T. London.....	do.	Feb. 6, 1909
2				78.00	64.44	13.56	National Savings and Trust Co.	T. Lanigan.	Mar. 1, 1909
1				139.45	139.45		National Electrical Supply Co.	do.	Feb. 26, 1909
				53.83	53.83		Inaugural committee, 1909.	do.	Mar. 4, 1909
			1		47.85		Anacostia and Potomac River R. R. Co.	do.	June 23, 1909
			2				Washington Railway and Electric Co.	do.	Apr. 30, 1909
			1	110.00	88.27	21.73	Anacostia and Potomac River R. R. Co.	do.	Mar. 26, 1909
			13 14	900.00	833.07	66.93	Capitol Traction Co.	W. J. Ward.	May 15, 1909
1				205.00	160.83	44.17	Bachelors' Lawn Tennis Club.	do.	Apr. 28, 1909
				140.00	104.06	35.94	J. M. Swingle.....	T. Lanigan.	July 9, 1909
			1		2.36		Postal Telegraph Co.	do.	Apr. 26, 1909
1				30.00	25.19	4.81	Washington Terminal Co.	do.	July 9, 1909
4					198.91		Anacostia and Potomac River R. R. Co.	do.	June 21, 1909
			1	11.62	11.62		Wm. Murphy.....	do.	May 5, 1909
2			2	85.58	85.58		Superint'd't Capitol Bldg. and Grounds.	do.	June 29, 1909
			1		40.59		Anacostia and Potomac River R. R. Co.	do.	June 23, 1909
			1		105.63		Capital Traction Co.	do.	June 28, 1909
				200.00	111.34	88.66	do.	do.	Oct. 5, 1908
				42.06	42.06		Superint'd't Public Bldgs. and Grounds.	do.	Sept. 16, 1908
21	4	14	17	27	3	11,430.83	11,265.11	672.57	

* Also 1 connection to water main made.

* Seventy-four additional sockets for railing pole.

* Erected and removed barricades to entrances.

* Awaiting bills for repairs to pavements.

* Furnished 5 concrete basin tops and 6 castings.

* Charged to general deposit.

TABLE No. 5.—Statement of work done by day labor under appropriation for main and pipe sewers, fiscal year ended June 30, 1909.

No. of order.	Location.	Pipe sewers laid (length in feet).								Manholes.		Basins.				Cost of—				Total cost.	
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch.	Branches.	Built.	Adjusted.	Frames and covers replaced.	Built.	Rebuilt.	Tops replaced.	Frames and gratings replaced.	Material.	Labor.		Repairs to pavements.	Work by plumber.
500	B street ne., west of Fourteenth, south side.				180									1				\$97.68	\$158.33	\$17.85	
501	Second street ne., north of N.	39												1				62.93	86.00		\$273.86
502	South Capitol street, between E and G.	66			189									2				271.29	387.97		148.93
503	First and Pierce streets ne., northwest corner.				15		24											17.04	20.23		688.56
504	South Carolina avenue se., west of Fourteenth.	66													1			34.41	60.48		37.27
505	Fourteenth and D streets sw.																	28.80	96.57	31.82	94.89
506	Fourteenth street se., north of South Carolina avenue, east side.	45																32.11	39.50		159.56
507	Sixth and H streets ne., southwest corner.	6												1				23.46	28.14		71.61
508	Monroe street, between West Virginia and Montello avenues, north side.	3												1				23.45	41.75		51.60
509	Gallaudet street ne., at Providence and Kendall streets, and Capitol avenue.	36													2			36.92	93.61		65.20
510	Tenth street sw., between D and E., west side.	6													1			22.50	31.21		130.53
511	Tenth street sw., between E and F., west side.	18													1			27.90	29.82		53.71
512	Tenth street sw., between F and G., west side.	51													2			35.62	50.17	3.57	57.72
513	Eighth and Monroe streets ne.	60													1			56.21	73.17		89.36
514	New Jersey avenue se., north of C.	36													2			44.69	75.26		120.38
515	Holmes place nw., between Otis and Newton streets.	108												4				106.74	163.38		119.95
516	Ingleside terrace, north side.	9												1				16.23	34.94		270.12
517	Warder street and Manor place nw., northwest corner.	27												1				22.12	36.99		51.17
518	Thirteenth and Kearney streets ne., northwest corner.	27												1				28.53	43.46		59.11
519	North Capitol and V streets nw., northeast and southwest corners.	186												3				123.81	276.74		71.99
520	North Capitol and V streets, northwest corner.	33												1				23.48	38.95		400.55
521	North Capitol and Todd place, northeast and southeast corners.	33													1			32.38	60.70		62.43
522	North Capitol and T streets, northwest corner.	15												1				19.24	29.87		93.08
523	Warder street and Park road nw., northwest and northeast corners.	48																48.20	75.63		93.08
525	New York avenue nw., between Fourth and Fifth streets.	15												1				12.68	37.87		123.83
																					50.55

526	Pennsylvania avenue se., between Ninth and Tenth streets.	12						38.28	66.15	104.43
527	New Jersey avenue and K street se., northwest.	12						28.21	29.02	57.86
528	North Carolina avenue and B street nw., Reservation "B."	78		250	8	1		41.53	80.28	121.81
529	B street sw., between Ninth and Tenth streets.							287.03	826.81	1,121.64
530	New Hampshire avenue and Newton place nw., southwest street se., between M and N., Property Yard ^b	39						31.69	50.99	82.68
531	Second street se., between M and N., Property Yard ^b									
533	R street nw., between Ninth and Tenth streets.	24						261.98	257.75	519.73
539	Fifth and R streets nw., northwest and southwest corners.							21.86	46.50	71.36
540	Eleventh street and Spring road nw., southwest corner.	48						57.03	119.75	176.78
541	Reservation 54, roadway south of	24						28.65	39.31	67.90
543	North Capitol street and Rhode Island avenue, northeast and southeast corners.	51						31.32	44.33	75.65
544	North Capitol and Adams streets, northwest corner.	96						55.65	95.38	151.03
545	Connecticut avenue and R street nw., northeast corner	18						25.05	42.07	67.12
549	G street se., between Twelfth and Thirteenth streets, south side.	36						20.44	60.08	80.52
550	Fourteenth street and Meridian place nw., southeast corner.	232.5			5	1		54.53	395.82	452.78
551	Fourteenth street and Newton place nw., southeast corner.	21						19.72	28.17	47.89
552	Fourteenth street, between Euclid and Kenyon streets nw., east side.	15						17.39	27.66	45.05
553	New Jersey avenue and S street nw., northeast corner.	105						72.17	123.08	203.42
555	Mount Olivet road, at West Virginia and Montello avenues ne.	9	165			2		114.86	215.12	329.98
556	Third street sw., between M and N.	66		42				82.94	95.05	177.99
557	Lanier place, between Adams Mill and Ontario roads.	425			11			177.08	577.48	858.24
559	B street nw., between Ninth and Tenth streets.	18			86	2	1	23.63	40.51	67.29
560	Louisiana avenue nw., between Ninth and Tenth streets.							131.79	297.11	513.21
564a	First and C streets se., northeast corner.			195.5	3			128.55	218.97	441.45
564b	First and C streets se., northwest corner	21						17.82	33.90	51.81
565	C street se., between First and Second streets	10						25.81	41.05	66.86
566	Fifth and Elm streets nw., northeast corner	218			12	1		104.85	337.83	557.19
568	Thirty-fourth street nw., at Q street and Dent place.	33						28.33	53.50	81.83
753	Vermont avenue, between alley of square 214 and Thomas circle.	144						119.19	169.64	323.70
576				232.5	5	1		150.73	681.46	928.58

c Also 1 basin adjusted.

b Constructing concrete basin tops.

a One hundred and thirty-five feet telephone conduit and 1 handhole constructed.

TABLE NO. 5.—Statement of work done by day labor under appropriation for main and pipe sewers, fiscal year ended June 30, 1909—Continued.

No. of order.	Location.	Pipe sewers laid (length in feet).							Manholes.		Basins.			Cost of—				Total cost.				
									Branches.	Built.	Adjusted.	Frames and covers replaced.	Rebuilt.	Tops replaced.	Grates and frames replaced.	Material.	Labor.		Repairs to pavements.	Work by plumbers.		
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.													24-inch.	
578	Newark street nw., west of Connecticut avenue.																	\$1.62	\$8.92			\$10.54
579	E street ne., between Twelfth and Thirteenth streets.		370		41.5						4	2						123.40	510.33	\$3.15		636.88
580	A street ne., between Sixth and Seventh streets.				198.8	315												281.86	792.01	5.18		1,079.05
582	Eleventh street and Spring road, southeast corner.		39											1				33.17	45.71			78.88
583	West Virginia avenue and Mount Olivet road, northeast corner.		54											1				27.25	35.50			62.75
587	Third and M streets nw., northwest corner.											1						11.07	34.06			45.13
591	Sixth and I streets se., northeast corner.																	1.30	1.50			1.80
592	G street nw., between North Capitol and First streets, south side.							340										347.81	651.52	139.89		1,139.22
593	Florida avenue nw., between Q and R streets, east side.	27							148.5									179.39	423.29	68.21		671.09
594	Delaware avenue and C street ne., southwest corner.		30								3	1		1				21.24	29.42			50.66
596	Square 233, in alley.	34			141.8													97.90	212.41	76.74		387.05
597	Eighteenth street nw., Belmont street, Kalorama terrace, Wyoming avenue.		42		42									3				112.04	232.38			344.42
598	Eighteenth street nw., between V and Columbia streets.		111									1		6				119.39	115.34			234.73
600	Second and N streets se., property yard.																	252.58	106.50			359.08
603	E street nw., between Ninth and Tenth streets.													2				22.26	16.85			39.11
604	Grand street nw., west end.		30											1				23.36	43.84			67.20
605	South Capitol and G streets.		18											1				20.85	49.94			70.79
606	Square 1195, lot 3.				84													24.60	48.25			72.85
607	New Jersey avenue and Morgan streets nw., northeast corner.		39								1			1				27.43	39.75			67.18
609	Front of 1205 F street nw.																	1.59	3.37			4.96
610	Congress Heights.												2					2.50	2.50			2.50
611	Eleventh street nw., between K and Florida avenues.																					
612	Front of 421 N street nw.																	5.45	3.00			5.98
613	D street nw., between Ninth and Tenth, south side.																	1.06	11.56	2.93		15.55
614	Harrison street, Anacostia, east of B & O tracks.		33															9.58	29.91			39.49
615	Fourteenth and A streets se., southwest corner.		21											1				25.34	62.39			87.73

616	Florida avenue ne., west of Seventh street.	24						15.94	44.88		60.82											
617	Eleventh and G streets nw., northeast corner	3						16.12	30.02		52.74											
618	Eleventh and Delahide place nw.							13.13	25.40		51.54											
619	H street nw., between Seventh and Eighth				1			13.13	13.40		42.20											
620	Square 250, in alley					1		10.05	32.15													
621	Florida and West Virginia avenues ne., north-	63						48.63	93.38		142.01											
622	west and northeast corners of																					
623	Fifth and S streets nw., northwest and northeast							25.38	45.37		70.75											
624	corners	9							5.50		5.50											
625	Forty-seventh and U streets se.																					
626	Forty-seventh and Woodley road, northwest	30						29.43	44.12		73.55											
627	corner	3						16.96	47.01		63.97											
628	E street se., east of First, north side	15						38.83	33.81		54.61											
629	U street se., between Sixteenth and Fendall st.							37.62	37.62		726.25											
630	Sixth street nw., between H and I streets ^a	3						22.10	23.25													
631	Various locations ^d	9						23.01	44.38		67.39											
632	Nichols avenue, south of V street se., east side																					
633	Twenty-seventh street nw., between I and K							12.99	53.28		66.27											
634	streets ^d																					
	Fifth street nw., between S and Florida avenue,	24																				
	east side.																					
	Total.	136	3	694.5	1,793.6	547.5	24	487.5	638.5	55	18	3	1	95	3	4	2	5,840.80	11,614.79	916.99	\$2.37	18,281.66

^a Abandoned 18-inch brick sewer and connected 1 lateral with sewer.^f One sump constructed.^g Work completed in fiscal year 1910.^h Constructed 152 feet of 6-foot diam. sewer.^a Repaired basin inlets.^b One basin abandoned.^c Constructing concrete basin tops.^d Awaiting bill for repairs to pavements.

TABLE No. 5.—Statement of work done by day labor under appropriation for main and pipe sewers, fiscal year ended June 30, 1909—Continued.

No. of order.	Location.	Pipe sewers laid (length in feet).							Manholes.		Basins.			Cost of—				Total cost.				
		Pipe sewers laid (length in feet).							Manholes.		Basins.			Cost of—								
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch.	Branches.	Built.	Adjusted.	Frames and covers replaced.	Built.	Rebuilt.	Tops replaced.	Grates and frames replaced.		Material.	Labor.	Repairs to pavements.	Work by plumber.
578	Newark street nw., west of Connecticut avenue ^a .																	\$1.62	\$8.92			\$10.54
579	E street ne., between Twelfth and Thirteenth streets.																	123.40	510.33	\$3.15		636.88
580	A street ne., between Sixth and Seventh streets.																	281.86	792.01	5.18		1,079.05
582	Eleventh street and Spring road southeast corner.																	33.17	45.71			78.88
583	West Virginia avenue and Mount Olivet road, northeast corner.																	27.25	35.50			62.75
587	Third and M streets nw., northwest corner.																	11.07	34.06			45.13
591	Sixth and I streets se., northeast corner ^b .																	.30	1.50			1.80
592	G street nw., between North Capitol and First streets, south side.																					
593	Florida avenue nw., between Q and R streets, east side.	27																347.81	651.52	139.89		1,139.22
594	Delaware avenue and C street ne., southwest corner.																	179.59	423.29	68.21		671.09
596	Square 253, in alley.	34																21.24	29.42			50.66
597	Eighteenth street nw., Belmont street, Kalorama avenue, Wyoming avenue.																	97.90	212.41	76.74		387.05
598	Eighteenth street nw., between V and Columbia road.																	112.04	232.38			344.42
600	Second and N streets se., property yard ^c .																	119.39	115.34			234.73
603	E street nw., between Ninth and Tenth streets.																	252.58	106.50			359.08
604	Grand street nw., west end.																	22.26	16.85			39.11
605	South Capitol and G streets ^b .																	23.36	43.84			67.20
606	Square 1136, lot 3.																	20.85	49.94			70.79
607	New Jersey avenue and Morgan streets nw., northeast corner.																	24.60	48.25			72.85
609	Front of 1205 F street nw.	39																27.43	39.75			67.18
610	Congress Heights.																	1.59	3.37			4.96
611	Eleventh street nw., between K and Florida avenue ^d .																		2.50			2.50
612	Front of 421 N street nw.																	5.45	3.00			8.45
613	D street nw., between Ninth and Tenth, south side.																	4.11	1.87			5.98
614	Harrison street, Anacostia, east of B. & O. tracks ^d .																	1.06	11.56	2.93		15.55
615	Fourteenth and A streets se., southwest corner.																	29.91	62.39			92.30
																		35.34				87.73

616	Florida avenue ne., west of Seventh street.	24								41.88	69.82											
617	Eleventh and G streets nw., northwest corner.	3								30.62	52.74											
618	Arkansas avenue and Deland place nw.									23.25	23.88											
619	H street nw., between Seventh and Eighth.									33.03	54.54											
620	Square 250, in alley.									10.65	42.20											
621	Florida and West Virginia avenues ne., north west and northeast corners.	63								18.63	142.01											
622	Fifth and S streets nw., northwest and northeast corners.	9								25.38	70.75											
623	Fourteenth and U streets se.									5.50	5.50											
624	Twenty-seventh and Woodley road, northwest corner.	30								20.43	73.55											
625	E street se., east of First, north side.	3								16.06	63.97											
626	U street se., between Sixteenth and Fendall.	15								20.80	64.61											
627	Sixth street nw., between H and I streets.									348.43	726.25											
628	Various locations.									22.10	45.35											
629	Nichols avenue, south of V street se., east side.	3								23.01	67.30											
630	Twenty-seventh street nw., between I and K streets.	9								12.90	66.27											
631	Fifth street nw., between S and Florida avenue, east side.									3.70	11.10											
632																						
633																						
634																						
	Total.	136	3	694.5	1,703.6	547.5	24	487.5	638.5	55	18	3	1	95	3	4	2	5,840.80	11,614.70	916.90	\$2.37	18,281.66

^a Repaired basin inlets.

^b One basin abandoned.

^c Constructing concrete basin tops.

^d Awaiting bill for repairs to pavements.

^e Abandoned 18-inch brick sewer and connected 1 lateral with sewer.

^f One stump constructed.

^g Work completed in fiscal year 1910.

^h Constructed 152 feet of 6-foot diam. sewer.

TABLE NO. 5.—Statement of work done by day labor under appropriation for main and pipe sewers, fiscal year ended June 30, 1909—Continued.

No. of order.	Location.	Pipe sewers laid (length in feet).						Manholes.		Basins.			Cost of—				Total cost.					
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch.	Branches.	Built.	Adjusted.	Frames and covers replaced.	Built.	Rebuilt.	Tops replaced.		Frames and Gables replaced.	Material.	Labor.	Repairs to pavements.	Work by plumber.
578	Newark street nw., west of Connecticut avenue.																	\$1.62	\$8.92			\$10.54
579	E street ne., between Twelfth and Thirteenth streets.																	123.40	510.33	\$3.15		636.88
580	A street ne., between Sixth and Seventh streets.				41.5							2						281.86	792.01	5.18		1,079.05
582	Eleventh street and Springroad southeast corner.			39	198.8	315								1				33.17	43.71			78.88
583	West Virginia avenue and Mount Olivet road, northeast corner.			54										1				27.25	35.50			62.75
587	Third and M streets nw., northwest corner.													1				11.07	34.06			45.13
591	Sixth and I streets se., northeast corner.																	.30	1.50			1.80
592	G street nw., between North Capitol and First streets, south side.																					1,139.22
593	Florida avenue nw., between Q and R streets, east side.	27																347.81	651.52	139.89		
594	Delaware avenue and C street ne., southwest corner.																	179.59	423.29	68.21		671.09
596	Square 253, in alley.	34																21.24	29.42			50.66
597	Eighteenth street nw., Belmont street, Kalorama avenue, Wyoming avenue.		30		141.8						3	1		1				97.90	212.41	76.74		387.05
598	Eighteenth street nw., between V and Columbia road.			42	42						1			3				112.04	232.38			344.42
600	Second and N streets se., property yard.			111							1			6				119.39	115.34			234.73
603	E street nw., between Ninth and Tenth streets.															2		252.58	106.50			359.08
604	Grand street nw., west end.			30										1				22.26	16.85			39.11
605	South Capitol and G streets.			18										1				23.36	43.84			67.20
606	Square 1135, lot 3.				84									1				20.85	49.94			70.79
607	New Jersey avenue and Morgan streets nw., northeast corner.			39										1				24.60	48.25			72.85
609	Front of 1205 F street nw.										1							27.43	39.75			67.18
610	Congress Heights.										2							1.59	3.37			4.96
611	Eleventh street nw., between K and Florida avenue.																	5.45	3.00			8.45
612	Front of 421 N street nw.																	4.11	1.87			5.98
613	D street nw., between Ninth and Tenth, south side.																	1.06	11.56		2.93	15.55
614	Harrison street, Anacostia, east of B. & O. tracks.	33																29.91	29.91			59.82
615	Fourteenth and A streets se., southwest corner.	21												1				25.34	62.39			87.73

616	Florida avenue ne., west of Seventh street.....	24	1	1	15.04	44.88	60.82
617	Florida avenue ne., east of Seventh street.....	3	1	1	16.63	30.25	46.88
618	Arkansas avenue and Deland place nw.				13.13	25.01	38.14
619	H street nw., between Seventh and Eighth.....		1		10.05	32.15	42.20
620	Square 250, in alley.....						
621	Florida and West Virginia avenues ne., north- west and north side.....	63	2		48.63	93.38	142.01
622	Florida and West Virginia avenues ne., north- west and north side.....						
623	Florida and West Virginia avenues ne., north- west and north side.....						
624	Florida and West Virginia avenues ne., north- west and north side.....						
625	Florida and West Virginia avenues ne., north- west and north side.....						
626	Florida and West Virginia avenues ne., north- west and north side.....						
627	Florida and West Virginia avenues ne., north- west and north side.....						
628	Florida and West Virginia avenues ne., north- west and north side.....						
629	Florida and West Virginia avenues ne., north- west and north side.....						
630	Florida and West Virginia avenues ne., north- west and north side.....						
631	Florida and West Virginia avenues ne., north- west and north side.....						
632	Florida and West Virginia avenues ne., north- west and north side.....						
633	Florida and West Virginia avenues ne., north- west and north side.....						
634	Florida and West Virginia avenues ne., north- west and north side.....						
	Total.....	136	3	694.5	1,793.6	547.5	24
						487.5	638.5
						18	3
						1	95
						3	4
						2	5,840.80
						11,614.79	916.99
						\$2.37	18,281.66

^a Abandoned 18-inch brick sewer and connected 1 lateral with sewer.

^f One sump constructed.

^g Work completed in fiscal year 1910.

^h Constructed 152 feet of 6-foot diam. sewer.

^a Repaired basin inlets.

^b One basin abandoned.

^c Constructing concrete basin tops.

^d Awaiting bill for repairs to pavements.

TABLE NO. 6.—Statement of work done by day labor under appropriation for suburban sewers, fiscal year ended June 30, 1909.

No. of order.	Location.	Pipe sewers laid (length in feet).			Man-holes built.	Miscellaneous work.	Cost of—		Total cost.
		15-inch.	18-inch.	24-inch.			Material.	Labor.	
800	Beach drive crossing Piney Branch			204	2	33 feet of 24-inch iron pipe laid.	\$666.77	\$2,063.14	\$2,730.91
801	Kendall and Galludet streets ne.			144	1		174.36	338.50	512.86
804	Line of Thirty-eighth street nw. to center Brandywine street.	3			1		76.48	170.65	247.13
805	Arizona avenue between Canal road and Tunlaw road.	114		144			199.46	478.48	677.94
806	Conduit road, between Arizona avenue and Foxhall road.			206	1		365.56	548.83	914.39
807	Arkansas avenue sewer, between Delafield place and Emerson street.					750 feet of 9-foot 3-inch sewer cleaned and 8 feet reconstructed.	12.98	539.19	552.17
809	Arkansas avenue and Decatur street.					Cutting channel and constructing dam	2.04	133.50	135.54
810	Conduit road near Foxhall road.					Repairing road way over sewer trench.	22.50	319.13	341.63
811	Piney Branch road, between Seventeenth street and Columbus avenue.					3 sumps abandoned and 3 connections to brick sewer made.	10.08	56.24	66.32
812	Brightwood reservoir.		427	31		Repairing fence.		6.24	6.24
814	Thirty-second street nw., between S and T streets.				2		442.90	601.72	1,044.62
	Total	117	427	729	7		1,913.13	5,255.62	7,168.75

TABLE No. 8.—Statement of work done under miscellaneous appropriations, fiscal year ended June 30, 1909.

No. of job.	Location.	Pipe sewers laid (length in feet).				Man- holes.		Basins.				Cost of—				Total cost.	Appropriation.
		6-inch.	8-inch.	10-inch.	12-inch.	Built.	Adjusted.	Built.	Rebuilt.	Adjusted.	Abandoned.	Material.	Labor.	Contin- gencies.	Repairs to pave- ment.		
1000	Various locations				42			5				\$90.28	\$164.51	\$12.74		\$207.53	Repairs to streets.
1002	New Hampshire avenue nw., between R and T streets.	75	12			4		1				343.31	997.60		\$32.29	1,373.20	Water and L streets, intercepting sewer.
1003	Fourteenth streets.			6													Improvements and repairs, north- east section.
1005	Florida avenue, ne., between Sixth and Eighth streets.							1				22.36	33.73	2.80		58.89	
1006	South Carolina avenue se., at Thirteenth street and at C street.			18				2				28.23	61.23	4.47		93.93	Paving South Carolina avenue se.
1007	Fourteenth and South Carolina avenue se., northwest corner.			6					1			19.90	31.90	2.59		54.39	Do.
1008	Fifteenth and South Carolina avenue se....			18					1			21.95	52.48	3.72		78.15	Do.
1009	Fifteenth and V streets nw., northwest cor- ner.								1			19.06	35.19	2.71		56.96	Paving V street nw.
1010	South Carolina avenue, west of Fifteenth street ne., south side.									1			3.95	.20		4.15	Paving South Carolina avenue se.
1011	Seventeenth and S streets nw., northwest and southeast corners.			27					2			41.08	67.37	5.42		113.87	Repairs to streets.
1012	Thirteenth and Kearney streets ne., and Twelfth and Lawrence ne.											4.67	24.75	1.47		30.89	Grading Kearney street ne.
1013	Tenth street sw. at E and F streets, east side.			12					1			25.66	40.38	3.30		69.34	Improvements and repairs, south- west section.
1015	Massachusetts and Florida avenues nw., northeast corner.			63					1			28.29	110.76	6.95	42.38	188.38	Repairs to streets.
1017	Fifth and F streets nw., southeast corner...			51					1			30.13	93.26	6.17	8.32	137.88	Do.
1020	Pennsylvania avenue se. at northeast cor- ner South Carolina avenue and at north- west corner Eleventh street.			12					2			34.01	68.02	5.10		107.13	Do.
1021	Tenth and E streets sw., northeast corner.								1			4.24	19.06	1.17		24.47	Improvements and repairs, south- west section.
1022	New Jersey avenue and L street se.....									2		3.50	30.67	1.71		35.88	Improvements and repairs, south- east section.
1023	New York avenue nw., east of Twelfth and east of Thirteenth streets.												5.79	.29		6.08	Repairs to streets.
1024	Eleventh and K streets se.....			6					1		3	20.06	38.15	2.91		61.12	Improvements and repairs, south- east section.

TABLE NO. 8.—Statement of work done under miscellaneous appropriations, fiscal year ended June 30, 1909—Continued.

No. of Job.	Location.	Pipe sewers laid (length in feet).				Man- holes.		Basins.			Cost of—				Total cost.	Appropriation.	
		6-inch.	8-inch.	10-inch.	12-inch.	Built.	Adjusted.	Built.	Adjusted.	Abandoned.	Material.	Labor.	Conti- gencies.	Repairs to pave- ment.			
1067	North side V street east of Nichols avenue and southeast corner Thirteenth and V streets se. ^a	9						2			\$37.26	\$57.20	\$4.72		\$90.18	Grading and improving streets of Anacostia.	
1068	Thirteenth and I streets nw., northeast, northwest, southwest corners.	21				3					49.26	121.94	8.56		179.76	Repairs to streets.	
1069	B street se., near First street <i>b</i>	36					4	1			46.35	72.91	5.96		45.08	Do.	
1070	Nichols avenue and U street, southeast.	9							1		16.37	26.56	2.15			Grading and improving streets of Anacostia.	
1071	First street se., west of First street, south side.	18							1		19.34	41.25	3.03		63.62	Widening Thirteenth street, extended, 1910.	
1072	Seventh and Q streets nw., southwest corner.	15						1			25.05	44.38	3.47		72.90	Asphalting Seventh street nw., Q to R streets, 1910.	
1074	Tenth and C streets nw., northwest corner <i>b</i> .		9			1					24.21	36.87	3.05			Improvements and repairs, northwest section.	
547	Fourth and L streets ne., and Fourth street, north of L street.	3							2		24.58	51.52	3.81		79.91	Improvements and repairs, northeast section.	
563a	First and C streets se., northeast corner.								1		6.30	43.52	2.49		52.31	Asphalting First street se., B to C streets.	
563b	First and C streets se., northwest corner.	3						1			20.89	31.26	2.61		54.76	Do.	
546	Monroe street, north of Harrison street, Anacostia.	63						1			40.38	81.34	6.09		127.81	Approaches to Anacostia Bridge.	
	Total	135	12	672	81	12	10	41	23	5	13	2,879.63	6,527.87	302.16	\$135.57	9,656.88	

^a A waiting bill for repairs to pavements.^b Repaired 135 flushing basins, \$12 of cost included for 4 taps to water main by water department, charged "Elimination of grade crossings, D. C., purchase, etc., of land, grading, etc."

TABLE No. 9.—*Sewage disposal system,*

Contract or job No.	Contractor or foreman.	Location.	Character of work.	Payments on contracts.
3011	Allis-Chalmers Co. ^a ...	Sewage pumping station....	Pumping machinery for sewage pumping station.	\$251,929.00
3925	E. J. Cartright ^b	From Nineteenth and C streets to Thirtieth and M streets ne.	Section "A," east side intercepting sewer.	47,435.48
4092	Warren F. Brenizer Co. ^b	From Hickeys road to Bladensburg road.	Section "B," east side intercepting sewer.	14,385.61
4083	American Mosaic Co. ^b	Sewage pumping station....	Tiling engine-room floor, sewage pumping station.	1,001.11
4254	E. G. Gummel.....	From Bladensburg road and Twenty-sixth street to Mills avenue and Franklin street.	Section "C," east side intercepting sewer.	15,554.24
4300	Shepherd Engineering Co.	Sewage pumping station....	Furnished two 75-kilowatt engines for electric generating plant, sewage pumping station.	4,613.40
4313	Warren F. Brenizer Co.	From Thirty-first and O streets ne. to Hickeys road.	Section "D," east side intercepting sewer.	9,077.40
4367	.....do. ^c	Under Rhode Island avenue divide.	Section "E," east side intercepting sewer (in tunnel).	
4379	.....do. ^c	Washington channel water front.	Sewage interceptor.	
4380	.....do. ^c	Sewage pumping station....	Facade wall.	
4287	.....do.....	Rock Creek intercepting sewer, between M and P streets.	Replacing distorted sections.	2,275.37
1000a	Foreman William J. Ward. ^d	Twenty - seventh and G streets nw.	Automatic regulators and chamber and storm-water overflow.	
1000b	Foreman Andrew Nevill.	Twenty - second and Water streets nw.	Automatic regulators and chamber.	
1003	Foreman Thomas Langan.	Water and L streets, intercepting sewer.	Interceptor connections.	
1036a	Foreman Andrew Nevill.	East side intercepting sewer.	Automatic regulator chamber at Fourth and N streets se.	
1036b	.....do.....	.....do.....	Automatic regulator chamber at Sixth and M streets se.	
1036c	.....do.....	.....do.....	Automatic regulator chamber at Ninth and M streets se.	
1036d	Foreman H. C. Peacock. ^c	.....do.....	Automatic regulator chamber at Twelfth and M streets se.	
1041	Foreman William J. Ward.	Twenty-first and A streets ne.	Section of east side intercepting sewer under boundary sewer.	
1053	Foreman Thomas Langan.	In line of Mills avenue, Langdon.	Boring test holes, section "E," east side intercepting sewer.	
1064	Foreman William J. Ward.	Right of way through parcel 162/12.	Section of east side intercepting sewer crossing Hickeys run.	

^a Includes work previously reported; also penalty of \$200 and charge of \$1,800 for painting engines.^b Includes work previously reported.

District of Columbia. construction.

Materials.		Cost of—			Repairs to pave- ments.	Total cost.	Com- pleted.	Appropriation.
Chargeable to contractor.	Not charge- able to contractor.	Inspection.	Materials.	Labor.				
\$172.50		\$572.00				\$254,856.50	Yes...	Sewage pumping station.
13,628.14	\$145.68	2,380.50				63,589.80	Yes...	East side intercepting sewer to Brookland.
4,708.90	187.85	442.00				19,724.36	Yes...	Do.
			\$3,911.67	\$2,750.83		7,663.61	Yes...	
456.72	17.17	906.00				16,934.13	Yes...	Do.
			115.83	1,370.20		6,099.43	No...	Unused balances.
3,013.86	74.18	383.00				12,548.44	Yes...	East side intercepting sewer to Brookland.
		94.50				94.50	No...	Do.
							No...	Unused balances.
2,172.81	14.60	595.50				5,058.28	No...	Do.
			2,866.39	3,984.73		6,851.12	Yes...	B street and New Jersey avenue trunk sewer, section "F."
			901.43	2,456.18		3,357.61	Yes...	Do.
			343.31	997.60	\$32.29	1,373.20	Yes...	Unused balances.
			186.62	591.77		778.39	Yes...	Do.
			231.18	660.51		891.69	Yes...	Do.
			396.18	1,347.59		1,743.77	Yes...	Do.
			133.17	677.69		810.86	No...	Do.
			506.20	2,294.93		2,800.13	Yes...	East side intercepting sewer to Brookland.
			24.64	319.59		344.23	Yes...	Do.
			463.23	850.96		1,314.19	Yes...	Do.

^cWork to be completed fiscal year 1910.^dIncludes \$4.35 cost of work by plumber; also \$5 cost of water-main tap made by water department.

TABLE No. 10.—*Number of inspectors and other employees of the sewer division temporarily employed, and the appropriations from which paid, for the fiscal year ended June 30, 1909.*

[This table includes the cost of wagons, teams, and carts; also 1 employee of record division, engineer department, and 1 employee of disbursing office carried on rolls for four months each.]

Appropriations.	Amounts expended for—			
	19 inspectors.	340 laborers and other employees.	3 foremen.	36 teams.
I. Construction, sewerage system:				
Main and pipe sewer—				
1908.....	\$260.00			
1909.....	673.12	\$12,903.73	\$146.81	\$3,420.50
Suburban sewers—				
1908.....	738.87			
1909.....	1,357.50	6,676.66	2.00	1,556.00
Assessment and permit work—				
1908.....	110.50			
1909.....	1,905.51	36,419.15	360.95	11,810.90
Improvements and repairs—				
Northwest section.....		52.43	2.50	19.00
Northeast section.....		80.68	7.50	38.50
Southwest section.....		32.86	1.50	21.75
Southeast section.....		44.24		22.50
Repairs to streets.....		885.59	49.50	417.25
Approaches to Anacostia Bridge.....		60.22		18.00
Paving V street nw., Fifteenth street to New Hampshire avenue.....		21.69		11.00
Asphalting C street ne., First street to Delaware avenue.....		33.00	5.00	13.50
Grading Kearney street ne.....		13.50		10.00
Paving First street se., B to C streets.....		104.07	2.50	49.00
Paving Massachusetts avenue nw., S to T streets.....		27.96		8.50
Paving North Capitol street, T to V streets.....		28.71	6.25	13.00
Asphalting Delaware avenue, B to C streets ne.....		15.13		5.00
Grading and improving Albermarle street.....		57.34		32.25
Paving South Carolina avenue se.....		90.22		48.50
Grading and improving streets of Anacostia.....		66.01	10.00	34.00
Grading and improving Massachusetts avenue extended.....	92.00			
Asphalting Seventh street nw., Q to R streets, 1910.....		26.62	3.75	14.00
Widening Thirteenth street extended, 1910.....		23.00	3.75	14.50
Elimination of grade crossings, District of Columbia.....		4,046.11	^a 37.75	^b 1,200.75
Miscellaneous trust fund deposits, District of Columbia.....	1,427.50	5,541.75	198.25	1,852.94
Congress Heights outlet.....	208.00	70.00		
Fourth street se. relief sewer.....	503.00	853.03	74.25	128.00
Broad branch and Soapstone branch sewer.....	217.87			
Maintenance public order, District of Columbia, 1909.....		644.63	21.80	274.80
II. Construction, sewage disposal system:				
Unused balances.....	2,169.00	28,419.96	24.00	1,983.37
East side intercepting sewer.....	2,835.00	3,418.70	270.24	638.75
B street and New Jersey avenue trunk sewer, section "F".....	283.50	5,032.91		1,830.50
III. Maintenance:				
Cleaning and repairing.....	553.87	41,444.63	157.99	2,900.37
Maintenance and operation sewerage pumping station.....	52.50	23,166.23		489.50

^a Includes \$368.53 charged to elimination of grade crossings, District of Columbia, improvement of plaza.^b Includes \$135.25 charged to elimination of grade crossings, District of Columbia, improvement of plaza.

TABLE No. 11.—Average cost of labor and material, per linear foot of pipe sewers, constructed by day labor; also average cost of basins.

[In this table it is assumed that the cost of materials used in basin connections is the same as that in the same size sewer. It is also assumed that on account of the difference in the depth of excavation, the cost of labor is half the cost of that of the same size sewer. This table does not embrace the cost of work of exceptionally difficult construction.]

Size of sewer.	Length.	Cost of—		Total.
		Materials.	Labor.	
	<i>Feet.</i>			
8-inch diameter.....	1,449	\$0.36	\$1.339	\$1.70
10-inch diameter.....	8,275.10	.365	1.165	1.53
12-inch diameter.....	13,815.50	.463	1.465	1.928
15-inch diameter.....	600	.558	1.589	2.147
18-inch diameter.....	734	.625	1.583	2.208
24-inch diameter.....	2,006.40	1.181	1.91	3.091
10-inch connection.....	2,376	.365	.5825	.9475
12-inch connection.....	382	.463	.7325	1.195
Catch basins (123).....		15.435	26.815	42.25

TABLE No. 12.—Conduits laid during fiscal year ending June 30, 1909.^a

No. of Duct.	Washington Rail- way and Electric Co.		Chesapeake and Potomac Tele- phone Co.		Capital Traction Co.		Western Union Telegraph Co.		Total.	
	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
1.....	7,862	7,862	1,783	1,783					9,645	9,645
2.....	1,087	2,174	12,333	24,666			410	820	13,830	27,660
3.....			427	1,281			953	2,859	1,380	4,140
4.....	44,997	179,988	21,921	87,648	4,720	18,880	959	3,836	72,597	290,388
6.....	56	336	9,143	54,858					9,199	55,194
8.....	3,515	28,120	312	2,496	5,102	40,816			8,929	71,432
10.....					32	320			32	320
12.....	1,949	23,388			769	9,228			2,718	32,616
16.....					376	6,016			376	6,016
20.....					770	15,400			770	15,400
Total ..	59,406	241,868	45,919	172,768	11,769	90,660	2,322	7,515	119,476	512,811

^a This table does not include 1,049 feet of United States Government conduit, 723 feet of Washington Market Co. pipe line, and 13 feet of Lansburgh & Bro. pipe line.

TABLE No. 13.—Gas mains laid during fiscal year ending June 30, 1909.

Size of main.	Washington Gas Light Co.	Georgetown Gas Light Co.	Total.
	<i>Linear feet.</i>	<i>Linear feet.</i>	<i>Linear feet.</i>
3-inch.....	1,646		1,646
4-inch.....	13,360	497	13,857
6-inch.....	44,352	7,850	52,202
8-inch.....		1,962	1,962
10-inch.....		1,620	1,620
12-inch.....	24,107	13,569	37,676
16-inch.....	36		36
24-inch.....	191		191
Total.....	83,692	25,498	109,190

TABLE NO. 14.—*Summary of conduits laid to June 30, 1909.^a*

No. of duct.	Washington Railway and Electric Co.		Chesapeake and Potomac Telephone Co.		Capital Traction Co.		Western Union Telegraph Co.		Total.	
	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
1.....	39,038	39,038	32,605	32,605			35	35	71,678	71,678
2.....	131,700	263,400	176,925	353,850	15,742	31,484	1,588	3,176	325,955	651,910
3.....	236	708	5,579	16,737			6,940	20,820	12,755	38,265
4.....	298,988	1,195,952	147,426	589,704	18,216	72,864	7,295	29,180	471,925	1,887,700
5.....							4,177	20,885	4,177	20,885
6.....	50,122	300,732	86,598	519,588	7,320	43,920	4,232	25,392	148,272	889,632
7.....			82	574	29	203			111	777
8.....	73,369	586,952	45,620	364,960	7,863	62,904			126,852	1,014,816
9.....	7,288	65,592	114	1,026					7,402	66,618
10.....	8,363	83,630	15,948	159,480	32	320	183	1,830	24,526	245,200
12.....	60,414	724,968	8,496	101,952	769	9,228			69,679	836,148
13.....	374	4,862	212	2,756			309	4,017	895	11,635
14.....	3,104	43,456	1,400	19,600	4,257	59,598			8,761	122,654
15.....	68	1,020					44	660	112	1,080
16.....	4,593	73,488	6,913	110,608	376	6,016			11,882	190,112
17.....			636	10,812					636	10,812
18.....	2,214	39,852	2,279	41,022					4,493	80,874
20.....	549	10,980	1,407	28,140		770	15,400		2,726	54,520
22.....	134	2,948	823	18,106	9,109	200,398			10,066	221,452
24.....	2,711	65,064	2,270	54,480					4,981	119,544
25.....			304	7,600					304	7,600
26.....					280	7,280			280	7,280
28.....	2,261	63,308							2,261	63,308
30.....	53	1,590	313	9,390					366	10,980
32.....	77	2,464	485	15,520					562	17,984
36.....	3,854	138,744	26	936					3,880	139,680
38.....	193	7,334							193	7,334
40.....			1,589	63,560					1,589	63,560
44.....	424	18,656							424	18,656
46.....			749	41,944					749	41,944
58.....	7	406							7	406
64.....	106	6,784	176	11,204					282	18,048
72.....			53	3,710					53	3,710
72.....			118	8,496					118	8,496
82.....			35	2,870					35	2,870
Total.	690,240	3,741,928	539,181	2,591,290	64,763	509,615	24,803	105,995	1,318,987	6,948,828

^a This table does not include 14,663 feet of Postal Telegraph Cable Company conduit, 2,446 feet of United States Government conduit, 420 feet of private conduit, 42 feet of Great Falls and Old Dominion Railway Company conduit, and 723 feet of Washington Market Company pipe line.

TABLE NO. 15.—*Summary of gas mains laid to June 30, 1909, beginning July 1, 1906.*

Size of main.	Washington Gas Light Co.	Georgetown Gas Light Co.	Total.
	<i>Linear feet.</i>	<i>Linear feet.</i>	<i>Linear feet.</i>
3-inch.....	1,646		1,646
4-inch.....	31,073	7,929	39,002
6-inch.....	96,864	11,179	108,043
8-inch.....		1,962	1,962
10-inch.....		1,620	1,620
12-inch.....	37,444	27,507	64,951
16-inch.....	36	234	270
20-inch.....	130		130
24-inch.....	8,066		8,066
Total.....	175,259	50,431	225,690

TABLE NO. 16.—*Tabulation showing the cost of sewerage system and the total lengths of sewers for twenty years, for each year, from 1890 to 1909.*

Fiscal year.	Total cost of sewerage system.	Cost of sewerage system for each year.	Total miles trunk sewers.	Total miles pipe sewers.	Annual cost of maintenance sewerage system.	Cost of sewage-disposal system for each year.	Annual cost of maintenance sewage-disposal system.
1890.....	\$7,400,721.62	\$175,000.00	62.05	204.13	\$35,000.00	.....	.....
1891.....	7,623,721.62	223,000.00	64.89	216.79	42,000.00	.....	.....
1892.....	7,842,721.62	219,000.00	67.16	227.60	45,000.00	.....	.....
1893.....	8,007,721.62	165,000.00	68.37	238.45	45,000.00	.....	.....
1894.....	8,298,931.62	291,210.00	71.32	250.13	45,000.00	\$86,704.34	.....
1895.....	8,476,431.62	177,500.00	74.48	260.20	45,000.00	86,961.74	.....
1896.....	8,661,731.62	185,300.00	77.65	270.28	50,000.00	60,836.57	.....
1897.....	8,901,731.62	240,000.00	81.36	284.06	50,000.00	126,572.97	.....
1898.....	9,047,731.62	146,000.00	83.92	298.91	50,000.00	201,218.32	.....
1899.....	9,187,731.62	136,000.00	85.65	307.36	50,000.00	227,759.75	.....
1900.....	9,309,731.62	126,000.00	88.30	317.20	50,000.00	203,761.05	.....
1901.....	9,515,731.62	206,000.00	90.89	327.86	58,000.00	343,865.52	.....
1902.....	9,696,731.62	181,000.00	93.49	338.13	58,000.00	228,554.36	.....
1903.....	9,817,731.62	121,000.00	96.31	351.73	58,000.00	288,554.54	.....
1904.....	9,940,731.62	123,000.00	99.12	357.70	58,000.00	180,203.32	.....
1905.....	10,040,881.62	100,150.00	103.21	365.60	42,000.00	637,450.69	.....
1906.....	10,128,881.62	88,000.00	109.09	375.26	38,000.00	706,514.55	.....
1907.....	10,363,881.62	235,000.00	112.20	389.24	44,500.00	335,865.28	.....
1908.....	10,536,681.62	172,800.00	113.94	407.24	45,000.00	237,945.65	\$53,600.00
1909.....	10,688,681.62	152,000.00	117.24	424.02	48,500.00	79,119.62	58,000.00

NOTE.—Cost of sewage-disposal system to date, \$4,031,888.27.

REPORT OF INSPECTOR OF BUILDINGS.

WASHINGTON, September 18, 1909.

SIR: I have the honor to submit herewith the annual report covering the transactions of the building department for the fiscal year ended June 30, 1909.

Statement of permits issued from July 1, 1908, to June 30, 1909.

	Number.	Value.		Number.	Value.
Brick repairs.....	1,569	\$949,467	Brick bowling alley.....	1	\$6,000
Brick dwellings.....	1,046	4,697,443	Brick studio.....	1	4,000
Brick apartment houses.....	78	2,917,220	Brick car barns.....	3	139,500
Brick stores and dwellings.....	38	180,900	Brick dairies.....	2	5,290
Brick stores.....	41	158,815	Brick ice house.....	1	30,000
Brick schools.....	5	504,000	Brick boiler houses.....	3	11,500
Brick stables.....	45	67,559	Concrete dwellings.....	6	20,200
Brick offices and office buildings.....	12	447,910	Frame repairs.....	1,000	132,580
Brick bakeries.....	4	15,400	Frame dwellings.....	1,028	2,972,048
Brick garages.....	26	67,425	Frame sheds.....	518	27,697
Brick D. A. R. hall (to complete).....	1	200,000	Frame stores.....	4	6,300
Brick Y. M. C. A. building.....	1	80,000	Frame stables.....	16	5,475
Brick sheds.....	21	20,875	Frame garages.....	5	850
Brick hospital.....	1	25,000	Frame blacksmith shops.....	4	2,285
Brick pump house.....	1	450	Frame stores and dwellings.....	2	3,500
Brick stores and apartments.....	2	32,000	Frame greenhouses.....	9	4,204
Brick hall.....	1	7,500	Frame factory.....	1	15,000
Brick workshop.....	2	1,800	Elevators.....	91	125,180
Brick substations.....	2	40,000	Motors.....	225	135,723
Brick stores and offices.....	4	60,000	Engines and boilers.....	18	23,790
Brick churches.....	7	94,500	Gas and gasoline engines.....	13	17,830
Brick clubhouse.....	1	2,000	Oven.....	1	1,000
Brick hotels.....	3	115,000	Scales.....	1	350
Brick bank.....	1	16,000	Heating apparatus.....	10	5,443
Brick warehouses.....	14	249,400	Dynamo.....	3	125
Brick gymnasium.....	1	5,000	Machinery.....	3	10,250
Brick 5-cent theatres.....	3	9,500	Minor repairs.....	3,200	32,000
Brick water tower.....	1	1,500	Signs.....	645	6,450
Brick bottling plant.....	1	50,000	Awnings.....	131	9,825
			Fire escapes.....	50	10,000
			Total.....	9,905	14,785,059

Comparative statement for the years 1908 and 1909.

	New buildings.	Repairs.	Dwell- ings.	Apart- ments.	Business buildings.
1909.....	2,410	2,889	2,170	78	207
1908.....	1,429	2,469	1,224	33	135
	981	420	946	45	72

Valuation of building operations, not including government work:

1909.....	\$14,785,059.00
1908.....	8,711,577.00
Increase.....	6,073,482.00

Permits issued, including buildings, repairs, minor repairs, awnings, engines, boilers, motors, signs, heating apparatus, etc.:

1909.....	9,905
1908.....	8,897
Increase.....	1,008
Projections beyond the building line applied for.....	1,655

The following summary will show the distribution of improvements in the different sections of the District and the values of same:

	Buildings.	Repairs.
Northwest.....	\$3,461,307.00	\$957,597.00
Southwest.....	388,300.00	120,058.00
Northeast.....	1,105,020.00	71,257.00
Southeast.....	738,020.00	57,138.00
County.....	7,576,221.00	251,866.00
	13,268,868.00	1,457,916.00

Estimated number of buildings in the District of Columbia.

	Brick buildings.	Frame buildings.
1908.....	51,196	22,794
Erected in 1909.....	1,367	1,050
Total.....	52,563	23,844

S. ASHFORD,
Inspector of Buildings.

Capt. WM. KELLY,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, District of Columbia.

COMPUTERS' REPORT.

WASHINGTON, August 4, 1909.

SIR: During the year it has been our duty to examine and officially stamp the plans for every building or other kind of structure erected in the District of Columbia, to make such calculations as necessary to insure structural safety, and to note that the plans otherwise conform to the building regulations. Much time was spent involving night work and work after hours in the preparation of the building regulations.

The regulations governing reenforced concrete, walls of buildings, subdivision of fire areas, etc., were prepared by your computers, and in addition thereto we assisted

in the preparation of the entire code. Considerable time was spent in the preparation of tables, etc., explanatory of the various regulations, and in tables of calculation drawn up to facilitate the work of the office. Previous to the inaugural ceremonies on March 4 it was necessary to examine the plans for all reviewing stands and to pass upon the construction in order to insure public safety. We were called upon at various times to make tests and reports thereon of floors, etc., in concrete buildings, on foundations for various structures, and to make examination of various buildings rented by the Federal Government.

The resignation of one of the computers on December 31, 1908, caused the duties of the office to devolve upon one man, which condition existed until February 8, 1909.

The rapid evolution of the fireproof buildings, involving the use of new materials of which but little is known, has necessitated much study to keep pace with the situation and the purchase of a great many reference books and publications, paid for out of our own pocket.

We desire particularly to call your attention to the urgent necessity of an appropriation for the tests of structural material. It is a matter of utmost necessity that these tests be made in the interests of public safety. Heretofore the cost of these tests has been borne personally by us, with such aid as could be obtained from outside parties, and it is our belief that the time has arrived when an annual appropriation for the prosecution and enlargement of these test operations has become a public necessity.

In calling attention to the range of duties we are called upon to perform and the necessary technical training required to compete with the outside engineers and architects in the lines of their chosen specialties, we ask a comparison of the salaries paid men in other cities who are performing similar duties. We therefore respectfully request that our salaries be increased to \$2,500 per annum.

Very respectfully,

JOHN P. HEALY,
CARROLL BEALE,
Engineers and Computers.

The INSPECTOR OF BUILDINGS.

ASSISTANT INSPECTORS' REPORT.

WASHINGTON, *July 24, 1909.*

SIR: We have the honor to submit herewith a statement of our official duties as assistant inspectors of buildings during the fiscal year ending June 30, 1909.

Visits to new buildings.....	37,948
Visits to old buildings.....	12,605
Visits of a miscellaneous character.....	5,442
Total, 1909.....	55,995
1908.....	52,953
Condemnation of buildings or parts thereof.....	915
Buildings taken down.....	34
Police-court cases.....	10
Cast-iron columns inspected.....	161
Buildings renumbered.....	278
Buildings numbered (new).....	420

In accordance with the foregoing report, the duties of the field inspectors, eight in number, have been somewhat increased the past fiscal year, as will be shown in comparison with the aggregate total of inspections for 1909 over the previous year ending June 30, 1908, attributable to the increased building operations throughout the District.

The great amount of work characterized under miscellaneous items must necessarily be taken up daily along with the regular building supervisions and inspection. The average attained, figuring pro rata for the year just ended, shows a daily increase of inspections of 2.33 over the past year, which allows 23.33 inspections daily to the credit of each field inspector, thus limiting the time of examination in all classes of work to an average of fourteen and a fraction minutes, including time consumed in reaching next building. It will, therefore, be seen that in order to properly supervise and look after the building operations which appear annually on the increase, combined

with the importance of actual time thus saved in reaching the work, that we be provided with better means of transportation other than self-propelled bicycles now in use only when weather conditions permit. A team or motor conveyance would tend to facilitate and enable us to handle to a better advantage the work assigned in our respective districts.

We also request again, as in the past years, the appointment of additional men to the present force to take up and investigate matters of minor importance, such as the renumbering of buildings, occasioned by numerous complaints and requests received daily; the drafting and delivering of notices in connection therewith; attending to the correction of all defective gutters and down spouts; conversion of frame sheds to use as stables inside the fire limits, etc.; and similar violations of the building regulations, as reported each day by the health, plumbing, and police departments.

We also ask your favorable consideration in the appointment of one man for the purpose of taking up matters where failure of noncompliance occurs after due notices have been served on owners or builders to properly prepare and submit cases of violation of the building regulations before the police court and thereby obtain a prosecution in lieu of possible dismissal under the present method.

In brief, we need assistance to handle work occasioned outside of the regular building-inspection work and which is now and has been made a part of the duties of the present field force.

With the questions arising from the miscellaneous items herein mentioned eliminated as a part of our work we feel confident that more effectual inspection may be had of the more important building construction. To avoid any delay to builders, and in our endeavors to keep our work up to date, we have at times found it necessary to work before and after official time. We do not make this statement in the nature of a protest or of constituting an obligation, but in this we feel that proper significance should be placed in considering our request for additional men.

In the matter of compensation for the work required of us and the attendant responsibility assumed in the performance of our duties, we again most urgently renew our appeal for an increase of salary to \$1,500 per annum.

Sincerely trusting to your good offices in advancing this request and giving the matter herein stated your favorable consideration, we have the honor to remain,

Most respectfully,

J. WM. DOWNING,
I. B. HAMMOND,
A. K. SELDAN,
A. M. PROCTOR,
A. S. J. ATKINSON,
S. G. HUNTT,
F. J. NIEDONANSKI,
E. G. CURTIS,

Assistant Inspectors of Buildings.

The INSPECTOR OF BUILDINGS.

REPORT OF THE INSPECTOR OF ELEVATORS.

WASHINGTON, August 23, 1909.

SIR: I have the honor to submit my annual report for fiscal year ending June 30, 1909. In submitting same I am pleased to say that the elevators in the city have been remarkably free from defective mechanism that would cause loss of life and property.

The general construction of elevators, both passenger and freight, continues to be of the high-class order, due in a great measure to the close supervision given to the work by this office, and is considerably augmented by the new regulations which recently became effective. In order that the inspections may be kept close to prescribed dates, it has been necessary for me to disregard the limited hours of work and continue my work at nights and on Sundays. This is not said in a way to reflect credit on myself, but is intended to show that the elevator branch of your office is not behind the other branches in the amount of work performed.

The duties of your inspector, however, have been made considerably easier by the licensing of elevator operators, and since January 1, 1909, the efficiency of the operators has increased greatly through their examinations, and they now realize the importance of conducting their elevators in the proper manner, and make reports to the office in case of any irregularities.

Only one case was taken in the courts during the year for the violation of elevator regulations, and that person was sent to jail for one year for cutting elevator cables. I wish to take this opportunity to bring to your attention the remuneration attached to the office of inspector of elevators. This office affords a yearly salary of \$1,200. The elevator mechanics of this and other cities are paid \$4.50 for an eight-hour day, with special rates and extra pay for all over time when the work is done outside of regular hours. They, therefore, receive more than the inspector of elevators, who has to judge and pass upon their work. They are also under the supervision of a superintendent employed by the company who, of course, is paid a higher salary, and his work of supervision is also under the scrutiny of the inspector. I, therefore, feel that my services should be more liberally compensated, as I am invariably called upon for a much more thorough knowledge of the elevator business than those who are in charge of the actual work. This would not only justly pay me for knowledge, responsibility, severe work, and long hours, but would aid also in establishing and maintaining the respect due my official position.

I thank you for the many courtesies extended me and your very kind consideration in the past.

Very respectfully,

WILLIAM I. EVANS,
Inspector of Elevators.

The INSPECTOR OF BUILDING

REPORT OF BOARD OF EXAMINERS FOR ELEVATOR OPERATORS.

WASHINGTON, D. C., *July 16, 1909.*

SIR: We beg to submit the following report of the board of examiners for elevator operators for the fiscal year ending June 30, 1909.

The first meeting of the board was held on the evening of January 11, 1909, and since that date weekly meetings have been held, several of which it was found necessary to hold after the regular business hours of the office in order to accommodate those who could not leave their places of employment to take their examination at the regular Tuesday meeting which is held from 2 to 4.30 p. m.

During this period the following number have been examined:

Examined.....	423
Failed and ordered to discontinue operation.....	14
Ordered back for reexamination and passed.....	57

Attention is invited to the act of Congress approved March 3, 1887, entitled "An act to regulate the construction and operation of elevators in the District of Columbia, and for other purposes."

On September 11, 1908, amendments were made to the existing elevator regulations and provided that "On and after the 1st day of January, 1909, it would be necessary for all persons operating elevators in the District of Columbia to obtain a certificate or license from the inspector of buildings to operate elevators; the fee for same shall be 50 cents, and it shall confine such janitor or elevator operator to the building that is mentioned in the certificate. This regulation did not apply to regularly licensed engineers and elevator builders known to the inspector of buildings.

From the above regulation the inspector of buildings created the undersigned board for the examination of all applicants for elevator licenses.

The efficiency of the elevator operators has increased more than 50 per cent through the examination conducted by this board whose duty it is to determine the fitness and practical qualifications of each applicant and his knowledge of the running parts of his elevator through an oral examination.

The license in each case is provisional, and on leaving the building for which he was examined the operator is required to register his change of address with the secretary of the board. In this way a complete record is kept of each operator and, if for any reason, he may become careless or negligent in the operation of his car he is brought before the board of examiners to make an explanation, and in his failing so to do his license is revoked and he is, therefore, not permitted to operate again in this city.

Since the creation of this board the revenue that the District should have derived amounts to \$277.31; this is for a period of six months. The expenses of the board for the necessary filing cabinets, stationery, badges, etc., amounted to \$183.30. This amount includes all paraphernalia and the only additional cost will be in the printing of forms that may become necessary from time to time.

As you are perhaps aware, this board is serving without compensation from the District, and it is frequently necessary for each member to return in the evening for the purpose of holding examinations. This is done in order to accommodate business houses in the city where it is impossible for the operators to take their examination during the afternoon. It has been the practice of the board to hold meetings on Tuesdays from 2 until all applicants have been examined, and it is often past 6 o'clock when the last applicant has been examined. Holding examinations on Tuesday of every week at 2 o'clock practically destroys the day for each member of this board; frequently we are at the extreme ends of the city, and in order to keep our appointment our duties have to be stopped about 1 o'clock. You can, therefore, see that much better progress could be made and our individual work better kept up if every meeting was held during the evening.

We therefore recommend that each member be allowed the same compensation as are the other members of boards of examiners for steam engineers, master plumbers, and automobile board which is \$300 per annum for each member. The above recommendation is made in view of the fact that the board of examiners for elevator operators can be made a self-sustaining institution.

A further recommendation would be made as to the issuance of badges for the operators. We understand that this will require an act of Congress—that is, to charge a fee of 25 cents for the badge and also a fee of 50 cents for each license.

During the early part of the fiscal year 1910, the third member of the board, Mr. W. St. C. Jones, resigned his position in the District service.

WILLIAM I. EVANS,
ROY E. HAYNES,

Board of Examiners for Elevator Operators.

THE INSPECTOR OF BUILDINGS

REPORT OF THE INSPECTOR OF STEAM BOILERS.

WASHINGTON, June 30, 1909.

SIR: I have the honor to submit the following report for the fiscal year ending June 30, 1909:

Boilers inspected.....	514
District of Columbia inspections (no fee).....	41
Fees still due.....	14
Boilers condemned as unfit for further use.....	15
Cases of—	
Deposit and sediment.....	30
Scale and incrustation.....	9
Internal corrosion.....	3
External corrosion.....	7
Defective braces and stays.....	11
Setting defective.....	5
Fractured plates.....	3
Burned plates.....	7
Blistered plates.....	8
Defective tubes.....	48
Defective heads.....	4
Serious leaks around tube ends.....	5
Defective blow-off.....	7
Cases of deficiency of water.....	3
Safety valves defective.....	16
Condemned for repairs.....	25
Defective steam gauges.....	10
Bulged heads and shell plates.....	9
Dangerous boilers.....	3

EXPENSES.

Care of horse.....	\$216.00
Shoeing horse.....	15.50
Premium on bond.....	10.00
Stationery and printing.....	25.00
Stamps.....	12.00

Repairs to old harness.....	\$2. 75
Business cards.....	1. 75
Record books.....	1. 40
Rubber shoes for horse.....	2. 50
Clerical work.....	132. 00
Total.....	418. 90
Total amount received.....	2, 295. 00
Expenses.....	418. 90
	1, 876. 10

Very respectfully,

E. F. VERMILLION,
Inspector Steam Boilers.

The INSPECTOR OF BUILDINGS.

REPORT OF BOARD OF EXAMINERS, STEAM ENGINEERS.

WASHINGTON, D. C., August 31, 1909.

SIR: We herewith submit to you the report of the board of examiners of steam engineers for the year ending June 30, 1909.

The following table shows the work as it progressed from month to month:

	Meet- ings held.	Appli- cants re- ceived.	Appli- cants ap- proved.	Appli- cants incom- petent.	First class.	Second class.	Third class.	Dupli- cate.	Re- voked.
1908.									
July.....	5	20	8	12	.....	2	6	.....	.....
August.....	4	11	4	7	1	.....	3	.....	.....
September.....	4	17	10	7	.....	3	6	1	.....
October.....	5	20	12	8	.....	2	10	.....	.....
November.....	5	10	7	3	.....	.....	6	1	.....
December.....	4	14	6	8	.....	.....	5	1	.....
1909.									
January.....	5	15	9	6	1	1	6	1	.....
February.....	5	25	14	11	3	1	9	1	.....
March.....	4	13	6	7	.....	.....	6	.....	.....
April.....	5	21	12	9	2	2	8	.....	.....
May.....	4	7	5	2	.....	.....	5	.....	.....
June.....	4	8	5	3	1	2	2	.....	.....
Total.....	54	181	98	83	8	13	72	5	.....

It is the desire of this board to keep the records of its work in the best approved manner. In order to be able to do this, it is requested that this office be furnished with a filing cabinet consisting of a card index containing 4,000 or 6,000 cards and file holders sufficient to contain the same number of applications with their accompanying letters of recommendations. The cards should be 4 by 6 inches and be printed leaving space sufficient to fill in the necessary record of the examination.

The record of the work of this board is at present kept in a book which was provided by the members of the board at their own personal expense. This book, however, is now nearly filled, and it is thought that in the future the record should be kept according to the card-index system, in order that it may be convenient for ready reference and in conformance with the system prevailing in all other departments of the District executive office.

Our estimate of expenses for the year ending June 30, 1911, will be found herewith attached upon the blanks provided for that purpose. We most respectfully ask that the amounts set forth be appropriated.

Respectfully submitted.

E. F. VERMILLION,
H. BOESCH, Secretary,
DAN'L JOHNSON,
Board of Examiners, Steam Engineers.

The INSPECTOR OF BUILDINGS.

REPORT OF SUPERINTENDENT OF REPAIRS.

WASHINGTON, D. C., August 31, 1909.

SIR: I have the honor to forward herewith my annual report of the repair shop for the fiscal year ending June 30, 1909.

The last appropriation, amounting to \$75,000, for repairs to schools was not sufficient to cover all the work requested by the custodians of the various buildings. With the small amount of money appropriated each year to meet the many demands, it is a severe task to perform the duties of this department to the satisfaction of all concerned.

The last appropriation act provided \$60,000 for fire protection in the public school buildings. Contract for such fireproofing has been awarded, and the work is now well under way toward safeguarding, as far as possible, the children, teachers, and the school property. However, with the appropriation just mentioned, it will be only possible to fireproof over the heating plants and construct fireproof stairways, landings, and corridors in 18 of the school buildings. In order to fully complete the work as originally planned, it is necessary to take up the work of fireproofing the 86 additional schools which require attention along these lines. It is not possible, owing to the short period in which these improvements must be made, to attempt to improve more than the 18 above mentioned during the summer vacation, and this completely exhausts the amount of the appropriation.

To continue this work with fireproof material will necessitate a further appropriation. The contracts have been reasonable and good results have been obtained, and all the buildings were ready for occupancy at the beginning of the school term in September.

In my last estimate I asked for the sum of \$10,000, to be used in sinking deep wells in the vicinity of the various suburban schools. While only \$5,000 was appropriated, I am making the best possible use of this sum, and a contract has been let and work started. In order that this work may be completed and maintained during the coming fiscal year, I recommend that the sum of \$5,000 be provided.

Improvements on both the office system and outside workings of this shop have been made to such an extent that I firmly believe we are fully as well equipped with a business method of taking care of the numerous branches of work we are called upon to perform as is possible.

I again urgently recommend the changing of the present method of purchasing materials. The system now in vogue has greatly hampered me this year in beginning work, which can be performed only during the period from July 1 to September 15, and by July 25 practically none of the necessary materials had been delivered. As this naturally interferes with the business of this office, I therefore respectfully recommend that the honorable Commissioners be requested to ask Congress to enact a law by which the municipal architect will be given authority to make purchases of stock on quantities after requesting at least three bids, when practicable, the cost of these materials to be paid for out of one appropriation, said appropriation to be reimbursed by repayments to be charged to the several funds on account of which said stock from time to time is used.

In this connection I would also recommend that Congress be asked to make all appropriations for use by this office immediately available, so that preparation for work might be begun as early as June 1. This would permit of the employment of labor for which no funds may now be disbursed until July 1, and if materials could also be purchased by us at an early date work would be well under way by June 20, in this manner saving fully a month not possible to be used now on account of the unfortunate delays in securing material.

This shop is continually in receipt of requests for petty repairs in school buildings which could very easily be taken care of by the janitors. As it is, my repair fund is repeatedly drawn upon for very trivial matters. If the janitors could be furnished with a few simple tools and instructed in the use thereof by the manual training branch of the board of education, so that said janitors might take care of the various repair items of a very minor character which at present cost from five to ten times as much as would be the case if attended to by them, the money so expended could be utilized in making repairs of a far more important nature, and thus aid materially in taking much better care of the District school property.

In the United States Statutes at Large (vol. 21, p. 464) it is provided "that the janitors of the principal school buildings, in addition to their other duties, shall do all minor repairs to buildings * * * glazing, * * *"

In volume 1 (R. S., D. C., p. 477, par. 7) it is provided "that hereafter the janitors of the principal school buildings, in addition to their other duties, shall do all minor repairs to buildings * * * glazing, * * * and take care of the heating apparatus." To enable me to obtain the best possible results out of the fund appropriated

for repairs to school buildings, etc., I earnestly recommend that the board of education be asked to instruct their corps of janitors in accordance with the foregoing statutes, to the end that, with their cooperation, the public schools of this city may be more appreciably benefited.

In my estimate for 1911, I am again requesting that the amounts of the several appropriations under my charge be increased. The number of buildings, repair and improvements, to which I am called upon to care for is constantly growing, yet it is expected that this work be performed year after year for practically the same amount, the additional small sums granted by Congress being entirely inadequate to render the services required of my force.

During the past year 15 per cent of the appropriation for repairs to schools was spent on heating apparatus alone. During the coming fiscal year it will be necessary to use more than \$5,000 to replace broken and worn-out parts of furnaces, etc. In addition to this, several of the larger heating plants practically need replacing. To do this work will require an expenditure of about 20 per cent of the total repair fund. As can be readily seen, this greatly depletes the funds out of which much other very important work must be paid for. If the present appropriation of \$75,000 "for repairs and improvements to school buildings and grounds and for repairing and renewing heating and ventilating apparatus" was available for use on repairs and improvements, with the exception of the heating apparatus, and that an increased amount be appropriated sufficient to care for heating plants was granted, much better results in all directions could be obtained. Some of the plants now in use have already deteriorated so much from age and are in need of such constant and thorough repairs that it would be considerably cheaper if they were replaced, yet this is an impossibility owing to the fact that the appropriation is already entirely too small to meet the demands now made upon this office. For this reason I earnestly recommend that Congress be importuned to give us an appropriation to care for this very important item of heating and ventilation.

The following detailed statement and summary will convey an approximate idea of the amount and class of work performed under my supervision.

Repairs and improvements to school buildings and grounds, 1909.

[Appropriation, \$75,000.]

Class of work.	Labor.	Material.	Contract.	Total.
<i>Abbot School, No. 27.</i>				
Carpentering.....	\$40.63	\$89.71	.....	\$130.34
Painting.....	18.06	6.87	.....	24.93
Tinning.....	30.74	3.48	.....	34.22
Heating.....	.....	.....	\$33.56	33.56
Total.....	89.43	100.06	33.56	223.05
<i>Adams School, No. 65.</i>				
Carpentering.....	82.50	190.46	.....	272.96
Painting.....	129.88	21.53	.....	151.41
Tinning.....	27.94	8.66	.....	36.60
Heating.....	.....	.....	30.76	30.76
Total.....	240.32	220.65	30.76	491.73
<i>Addison School, No. 63.</i>				
Carpentering.....	42.72	20.80	.....	63.52
Painting.....	43.23	4.89	.....	48.12
Tinning.....	33.32	7.94	.....	41.26
Heating.....	.....	.....	48.28	48.28
Material drawn by janitor.....	.....	1.44	.....	1.44
Total.....	119.27	35.07	48.28	202.62
<i>Ambush School, No. 79.</i>				
Carpentering.....	10.25	2.20	.....	12.45
Painting.....	10.50	3.21	.....	13.71
Tinning.....	29.37	13.90	.....	43.27
Heating.....	.....	.....	69.98	69.98
Material drawn by janitor.....	.....	1.93	.....	1.93
Total.....	50.12	21.24	69.98	141.34

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Amidon School, No. 42.</i>				
Carpentering.....	\$8.50	\$4.87		\$13.37
Painting.....	270.12	51.93		322.05
Tinning.....	12.38	2.72		15.10
Gas engines.....	14.76	7.52		22.28
Heating.....			\$37.98	37.98
Material drawn by janitor.....		3.81		3.81
Total.....	305.76	70.85	37.98	414.59
<i>Armstrong Manual Training School, No. 129.</i>				
Carpentering.....	297.54	136.82		434.36
Painting.....	60.24	25.91		86.15
Tinning.....	46.08	26.44		72.52
Steamfitting.....	144.23	95.89		240.12
Grading and seeding lawn.....	168.86	3.64		172.50
Material drawn by janitor.....		1.79		1.79
Total.....	716.95	290.49		1,007.44
<i>Arthur School, No. 70.</i>				
Carpentering.....	11.57	5.91		17.48
Painting.....	237.21	68.20		305.41
Tinning.....	32.81	16.70		49.51
Heating.....			11.24	11.24
Metal ceilings, etc.....			\$51.50	51.50
Material drawn by janitor.....		2.01		2.01
Total.....	281.59	92.82	862.74	1,237.15
<i>Banneker School, No. 39.</i>				
Carpentering.....	43.22	87.80		131.02
Painting.....	14.37	2.79		17.16
Tinning.....	12.50	10.19		22.69
Gas engines.....	35.07	12.62		47.69
Heating.....			30.30	30.30
Material drawn by janitor.....		2.55		2.55
Total.....	105.16	115.95	30.30	251.41
<i>Bell School, No. 78.</i>				
Carpentering.....	20.00	13.88		33.88
Painting.....	13.56	3.09		16.65
Tinning.....	59.34	22.55		81.89
Heating and repairs to furnace.....			222.28	222.28
Material drawn by janitor.....		.70		.70
Total.....	92.90	40.22	222.28	355.40
<i>Benning School, No. 48.</i>				
Carpentering.....	68.00	50.43		118.43
Painting.....	2.00	.30		2.30
Tinning.....	44.13	13.97		58.10
Total.....	114.13	64.70		178.83
<i>Berret School, No. 66.</i>				
Carpentering.....	14.50	19.96		34.46
Painting.....	4.94	.97		5.91
Tinning.....	39.88	1.19		41.07
Heating.....			28.29	28.29
Material drawn by janitor.....		.70		.70
Total.....	59.32	22.82	28.29	110.43
<i>Birney School, No. 127.</i>				
Carpentering.....	10.50	2.74		13.24
Painting.....	3.06	1.72		4.78
Gas engines.....	11.90	3.01		14.91
Heating.....			35.65	35.65
Miscellaneous.....			1.00	1.00
Material drawn by janitor.....		3.30		3.30
Total.....	25.46	10.77	36.65	72.88

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Birney School Annex.</i>				
Carpentering.....	\$1.00	\$5.06		\$6.06
Painting.....	3.37	1.15		4.52
Tinning.....	12.31	5.45		17.76
Total.....	16.68	11.66		28.34
<i>Blair School, No. 50.</i>				
Carpentering.....	105.48	181.38		286.86
Painting.....	152.19	32.40		184.59
Tinning.....	28.19	11.75		39.94
Gas engines.....	12.29	9.53		21.82
Grading.....	9.75	.54		10.29
Heating.....			\$7.71	7.71
Material drawn by janitor.....		12.81		12.81
Total.....	307.90	248.41	7.71	564.02
<i>Blake School, No. 61.</i>				
Carpentering.....	6.50	3.56		10.06
Painting.....	189.81	19.05		208.86
Tinning.....	38.31	3.02		41.33
Extensive repairs to furnaces and heating.....			171.82	171.82
Material drawn by janitor.....		12.56		12.56
Total.....	234.62	38.79	171.82	445.23
<i>Blow School, No. 145.</i>				
Carpentering.....	26.50	2.82		29.32
Painting.....	245.05	88.23		333.28
Tinning.....	21.31	4.52		25.83
Electric motor.....	.38			.38
Heating.....			51.04	51.04
Miscellaneous.....	4.50	1.50		6.00
Material drawn by janitor.....		2.21		2.21
Total.....	297.74	99.28	51.04	448.06
<i>A. Bowen School, No. 109.</i>				
Carpentering.....	12.75	5.08		17.83
Painting.....	85.31	21.80		107.11
Tinning.....	24.94	3.00		27.94
Gas engines.....	4.51			4.51
Heating.....			39.60	39.60
Material drawn by janitor.....		.70		.70
Total.....	127.51	30.58	39.60	197.69
<i>S. J. Bowen School, No. 123.</i>				
Carpentering.....	56.42	39.89		96.31
Painting.....	55.81	14.36		70.17
Tinning.....	50.88	17.09		68.57
Steam fitting.....	28.20	8.61		36.81
Grading.....	58.13			58.13
Material drawn by janitor.....		10.76		10.76
Total.....	249.44	91.31		340.75
<i>Bradley School, No. 60.</i>				
Carpentering.....	49.38	98.83		148.21
Painting.....	13.62	3.36		16.98
Tinning.....	16.63	14.79		31.42
Heating.....			50.14	50.14
Material drawn by janitor.....		1.43		1.43
Total.....	79.63	118.41	50.14	248.18
<i>Brent School, No. 46.</i>				
Carpentering.....	106.09	224.61		330.70
Painting.....	28.69	8.48		37.17
Tinning.....	43.25	14.14		57.39
Gas engines.....	56.64	36.37		93.01
Grading.....	7.50	.22		7.72
Heating.....			44.53	44.53
Material drawn by janitor.....		7.40		7.40
Total.....	242.17	291.22	44.53	577.92

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Briggs School, No. 75.</i>				
Carpentering.....	\$3.50	\$2.65	.....	\$6.15
Painting.....	5.31	1.94	.....	7.25
Tinning.....	6.44	12.14	.....	18.58
Heating.....	.....	.....	\$43.86	43.86
Material drawn by janitor.....	.....	6.31	.....	6.31
Total.....	15.25	23.04	43.86	82.15
<i>Brightwood School, No. 104.</i>				
Carpentering.....	100.41	28.53	.....	128.94
Painting.....	6.00	1.03	.....	7.03
Grading.....	28.75	.....	.....	28.75
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	135.16	30.26	.....	165.42
<i>Brightwood Park School, No. 151.</i>				
Carpentering.....	20.63	38.27	.....	58.90
Painting.....	7.00	2.11	.....	9.11
Gas engines.....	17.29	.38	.....	17.67
Total.....	44.92	40.76	.....	85.68
<i>Brookland School, No. 103.</i>				
Carpentering.....	45.38	53.82	.....	99.20
Painting.....	10.13	3.23	.....	13.36
Tinning.....	42.55	14.45	.....	57.00
Steamfitting.....	4.88	.....	.....	4.88
Miscellaneous.....	.....	2.10	.....	2.10
Material drawn by janitor.....	.....	4.92	.....	4.92
Total.....	102.94	78.52	.....	181.46
<i>Bruce School, No. 112.</i>				
Painting.....	6.00	1.89	.....	7.89
Tinning.....	55.25	9.23	.....	64.48
Gas engines.....	13.54	12.07	.....	25.61
Heating.....	.....	.....	49.13	49.13
Material drawn by janitor.....	.....	4.47	.....	4.47
Total.....	74.79	27.66	49.13	151.58
<i>Bryan School, No. 155.</i>				
Material drawn by janitor.....	.....	.70	.....	.70
<i>Buchanan School, No. 96.</i>				
Carpentering.....	50.82	103.66	.....	154.48
Painting.....	7.88	1.28	.....	9.16
Tinning.....	40.63	17.43	.....	58.06
Heating.....	.....	.....	25.81	25.81
Miscellaneous.....	1.87	.50	.....	2.37
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	101.20	123.57	25.81	250.58
<i>Bunker Hill Road School, No. 47.</i>				
Carpentering.....	10.36	4.02	.....	14.38
Painting.....	2.63	1.61	.....	4.24
Tinning.....	4.00	3.64	.....	7.64
Total.....	16.99	9.27	.....	26.26
<i>Burrville School, No. 91.</i>				
Carpentering.....	71.07	92.37	.....	163.44
Painting.....	5.50	.97	.....	6.47
Tinning.....	3.50	3.59	.....	7.09
Total.....	80.07	96.93	.....	177.00
<i>Business High School, No. 144.</i>				
Carpentering.....	47.01	16.14	.....	63.15
Painting.....	63.31	23.62	.....	86.93
Tinning.....	12.88	3.65	.....	16.53
Steamfitting.....	95.65	23.10	.....	118.75
Grading.....	44.25	1.52	.....	45.77
Miscellaneous.....	47.20	5.55	.....	52.75
Material drawn by janitor.....	.....	13.80	.....	13.80
Total.....	310.30	87.38	.....	397.68

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Carbery School, No. 58.</i>				
Carpentering.....	\$20.00	\$10.47	.....	\$30.47
Painting.....	5.56	4.01	.....	9.57
Tinning.....	184.13	63.00	.....	247.13
Heating.....	.....	.....	\$20.46	20.46
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	209.69	78.18	20.46	308.33
<i>Cardozo School, No. 148.</i>				
Carpentering.....	24.50	6.55	.....	31.05
Painting.....	111.06	19.44	.....	130.50
Tinning.....	49.32	6.84	.....	56.16
Gas engines.....	9.03	2.58	.....	11.61
Heating.....	.....	.....	10.46	10.46
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	193.91	36.11	10.46	240.48
<i>Central High School, No. 43.</i>				
Carpentering.....	1,348.63	1,064.35	.....	2,412.98
Painting.....	267.58	50.64	.....	318.22
Tinning.....	120.06	84.55	.....	204.61
Steamfitting.....	133.42	42.76	.....	176.18
Heating.....	.....	.....	1.32	1.32
Miscellaneous.....	4.50	3.00	.....	7.50
Grating, repair of railing, etc.....	.....	.....	45.78	45.78
Vertical boiler.....	.....	.....	265.00	265.00
Material drawn by janitor.....	.....	35.43	.....	35.43
Total.....	1,874.19	1,280.73	312.10	3,467.02
<i>Chain Bridge Road School, No. 6.</i>				
Carpentering.....	25.05	6.34	.....	31.39
Tinning.....	14.00	3.40	.....	17.40
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	39.05	10.44	.....	49.49
<i>Chevy Chase School, No. 113.</i>				
Carpentering.....	49.34	110.92	.....	160.26
Painting.....	2.30	.19	.....	2.49
Tinning.....	21.25	2.02	.....	23.27
Material drawn by janitor.....	.....	1.25	.....	1.25
Total.....	72.89	114.38	.....	187.27
<i>Conduit Road School, No. 25.</i>				
Carpentering.....	8.53	5.53	.....	14.06
Tinning.....	9.63	5.91	.....	15.54
Material drawn by janitor.....	.....	.91	.....	.91
Total.....	18.16	12.35	.....	30.51
<i>Congress Heights School, No. 111.</i>				
Carpentering.....	166.66	221.56	.....	388.22
Painting.....	36.88	12.87	.....	49.75
Tinning.....	137.06	74.26	.....	211.32
Heating.....	.....	.....	24.10	24.10
Material drawn by janitor.....	.....	8.30	.....	8.30
Total.....	340.60	316.99	24.10	681.69
<i>Cook School, No. 30.</i>				
Carpentering.....	67.93	110.20	.....	178.13
Painting.....	11.94	2.41	.....	14.35
Tinning.....	2.06	.....	.....	2.06
Steam fitting.....	1.50	3.12	.....	4.62
Gas engines.....	15.87	7.34	.....	23.21
Heating.....	.....	.....	15.18	15.18
Material drawn by janitor.....	.....	1.65	.....	1.65
Total.....	99.30	124.72	15.18	239.20
<i>Corcoran School, No. 68.</i>				
Carpentering.....	171.01	213.14	.....	384.15
Painting.....	190.50	32.42	.....	222.92
Tinning.....	25.88	2.34	.....	28.22
Heating.....	.....	.....	36.97	36.97
Material drawn by janitor.....	.....	6.84	.....	6.84
Total.....	387.39	254.74	36.97	679.10

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Cranch School, No. 157.</i>				
Carpentering.....	\$32.51	\$24.45		\$56.96
Painting.....	10.19	3.46		13.65
Tinning.....	8.50	2.35		10.85
Steam fitting.....	17.75	10.62		28.37
Material drawn by janitor.....		4.86		4.86
Total.....	68.95	45.74		114.69
<i>Curtis School, No. 26.</i>				
Carpentering.....	170.33	179.34		349.67
Painting.....	54.12	16.54		70.66
Tinning.....	13.69	3.01		16.70
Steam fitting.....	24.74	4.57		29.31
Material drawn by janitor.....		.70		.70
Total.....	262.88	204.16		467.04
<i>Deanwood School, No. 152.</i>				
Carpentering.....	50.06	13.51		63.57
Painting.....	19.50	3.89		23.39
Tinning.....	4.00	6.87		10.87
Grading.....	2.25			2.25
Miscellaneous.....	6.75			6.75
Material drawn by janitor.....		1.60		1.60
Total.....	82.56	25.87		108.43
<i>Dennison School, No. 52.</i>				
Carpentering.....	201.14	212.60		413.74
Painting.....	471.17	61.43		532.60
Tinning.....	18.99	10.92		29.91
Steam fitting.....	65.32	33.16		98.48
Material drawn by janitor.....		5.60		5.60
Total.....	756.62	323.71		1,080.33
<i>Dent School, No. 120.</i>				
Carpentering.....	152.70	40.85		193.55
Painting.....	86.19	18.19		104.38
Tinning.....	8.25	1.41		9.66
Gas engines.....	10.28	6.05		16.33
Heating.....			\$23.28	23.28
Miscellaneous.....	4.50	2.00		6.50
Material drawn by janitor.....		1.22		1.22
Total.....	261.92	69.72	23.28	354.92
<i>Douglass School, No. 99.</i>				
Carpentering.....	33.00	29.88		62.88
Painting.....	238.13	48.22		286.35
Tinning.....	27.69	12.15		39.84
Gas engines.....	7.74	8.67		16.41
Heating.....			29.60	29.60
Material drawn by janitor.....		4.11		4.11
Total.....	306.56	103.03	29.60	439.19
<i>Eastern High School, No. 85.</i>				
Carpentering.....	260.57	227.09		487.66
Painting.....	76.13	26.28		102.41
Tinning.....	30.64	14.46		45.10
Steam fitting.....	57.13	14.63		71.76
Grading.....	7.50	2.80		10.30
Heating.....			.75	.75
Material drawn by janitor.....		3.74		3.74
Total.....	431.97	289.00	.75	721.72
<i>Eckington School, No. 116.</i>				
Carpentering.....	173.75	227.23		400.98
Painting.....	135.37	44.21		179.58
Tinning.....	16.25	9.78		26.03
Gas engines.....	16.17	2.79		18.96
Heating, new furnaces.....			740.00	740.00
Total.....	341.54	284.01	740.00	1,365.55

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Edmonds School, No. 135.</i>				
Carpentering.....	\$98.25	\$88.39	.....	\$186.64
Painting.....	127.57	39.45	.....	167.02
Tinning.....	12.88	3.38	.....	16.26
Gas engines.....	9.68	8.92	.....	18.60
Heating.....	.....	.....	\$19.61	19.61
Material drawn by janitor.....	.....	7.96	.....	7.96
Total.....	248.38	148.10	19.61	416.09
<i>Emery School, No. 133.</i>				
Carpentering.....	26.69	21.15	.....	47.84
Painting.....	22.75	8.08	.....	30.83
Tinning.....	9.63	1.27	.....	10.90
Steam fitting.....	12.69	1.90	.....	14.59
Grading.....	45.56	.....	.....	45.56
Miscellaneous.....	5.25	2.00	.....	7.25
Material drawn by janitor.....	.....	21.10	.....	21.10
Total.....	122.57	55.50	.....	178.07
<i>Fillmore School, No. 92.</i>				
Carpentering.....	59.00	72.16	.....	131.16
Painting.....	10.99	2.50	.....	13.49
Tinning.....	97.13	45.95	.....	143.08
Heating.....	.....	.....	49.29	49.29
Material drawn by janitor.....	.....	2.59	.....	2.59
Total.....	167.12	123.20	49.29	339.61
<i>Force School, No. 32.</i>				
Carpentering.....	125.69	214.05	.....	339.74
Painting.....	229.68	41.82	.....	271.50
Tinning.....	44.70	23.23	.....	67.93
Steam fitting.....	3.00	1.35	.....	4.35
Grading.....	1.50	.....	.....	1.50
Total.....	404.57	280.45	.....	685.02
<i>Fort Stocum School, No. 11.</i>				
Carpentering.....	9.66	.76	.....	10.42
Tinning.....	15.75	6.45	.....	22.20
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	25.41	7.91	.....	33.32
<i>Franklin School, No. 15.</i>				
Carpentering.....	350.50	170.48	.....	520.98
Painting.....	290.39	93.54	.....	383.93
Tinning.....	30.01	5.43	.....	35.44
Steam fitting.....	1.51	54.04	.....	55.55
Miscellaneous.....	8.20	.....	.....	8.20
Material drawn by janitor.....	.....	1.86	.....	1.86
Total.....	680.61	325.35	.....	1,005.96
<i>B. B. French School, No. 144.</i>				
Carpentering.....	7.14	.72	.....	7.86
Painting.....	2.63	1.14	.....	3.77
Tinning.....	5.50	1.13	.....	6.63
Gas engines.....	17.71	4.42	.....	22.13
Heating.....	.....	.....	19.76	19.76
Material drawn by janitor.....	.....	2.69	.....	2.69
Total.....	32.98	10.10	19.76	62.84
<i>Gage School, No. 143.</i>				
Carpentering.....	100.47	48.59	.....	149.06
Painting.....	10.19	4.80	.....	14.99
Gas engines.....	25.80	3.87	.....	29.67
Heating.....	.....	.....	37.04	37.04
Miscellaneous.....	.....	5.60	.....	5.60
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	136.46	63.56	37.04	237.06

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Gales School, No. 36.</i>				
Carpentering.....	\$92.63	\$39.02	.....	\$131.65
Painting.....	285.56	53.35	.....	338.91
Tinning.....	18.13	3.69	.....	21.82
Steam fitting.....	112.88	18.45	.....	131.33
Material drawn by janitor.....	.....	23.57	.....	23.57
Total.....	509.20	138.08	.....	647.28
<i>Garfield School, No. 106.</i>				
Carpentering.....	10.34	10.12	.....	20.46
Painting.....	7.88	1.67	.....	9.55
Tinning.....	19.00	8.27	.....	27.27
Total.....	37.22	20.06	.....	57.28
<i>Garnet School, No. 34.</i>				
Carpentering.....	99.33	226.01	.....	325.34
Painting.....	14.69	6.70	.....	21.39
Tinning.....	13.07	2.88	.....	15.95
Steam fitting.....	8.06	3.00	.....	11.06
Material drawn by janitor.....	.....	2.69	.....	2.69
Total.....	135.15	241.28	.....	376.43
<i>Garrison School, No. 76.</i>				
Carpentering.....	59.41	11.82	.....	71.23
Painting.....	17.49	5.86	.....	23.35
Tinning.....	26.50	9.76	.....	36.26
Grading.....	5.25	.....	.....	5.25
Heating.....	.....	.....	\$29.91	29.91
Material drawn by janitor.....	.....	.02	.....	.02
Total.....	108.65	27.46	29.91	166.02
<i>Giddings School, No. 63.</i>				
Carpentering.....	92.69	82.49	.....	175.18
Painting.....	101.19	22.39	.....	123.58
Tinning.....	27.20	2.34	.....	29.54
Heating.....	.....	.....	46.04	46.04
Material drawn by janitor.....	.....	5.71	.....	5.71
Total.....	221.08	112.93	46.04	380.05
<i>Good Hope School, No. 73.</i>				
Carpentering.....	16.69	16.37	.....	33.06
Painting.....	2.20	.93	.....	3.13
Total.....	18.89	17.30	.....	36.19
<i>Grant School, No. 41.</i>				
Carpentering.....	76.67	120.85	.....	197.52
Painting.....	210.49	38.27	.....	248.76
Tinning.....	34.87	14.06	.....	48.93
Steamfitting.....	5.69	.80	.....	6.49
Material drawn by janitor.....	.....	9.71	.....	9.71
Total.....	327.72	183.69	.....	511.41
<i>Greenleaf School, No. 105.</i>				
Carpentering.....	54.66	107.00	.....	161.66
Painting.....	3.06	.25	.....	3.31
Tinning.....	20.88	9.93	.....	30.81
Gas engines.....	12.41	13.87	.....	26.28
Heating.....	.....	.....	55.57	55.57
Material drawn by janitor.....	.....	1.95	.....	1.95
Total.....	91.01	133.00	55.57	279.58
<i>Hamilton School, No. 37.</i>				
Carpentering.....	46.06	52.92	.....	98.98
Painting.....	3.75	1.60	.....	5.35
Repair of pump and well.....	29.12	.....	.....	29.12
Tinning.....	12.88	12.04	.....	24.92
Total.....	91.81	66.56	.....	158.37

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Harrison School, No. 84.</i>				
Carpentering.....	\$50.34	\$119.13	.....	\$169.47
Painting.....	183.75	21.72	.....	205.47
Tinning.....	29.50	8.14	.....	37.64
Heating.....	.....	.....	\$18.52	18.52
Material drawn by janitor.....	.....	1.23	.....	1.23
Total.....	263.59	150.22	18.52	432.33
<i>Hayes School, No. 107.</i>				
Carpentering.....	38.31	28.00	.....	66.31
Painting.....	42.25	8.25	.....	50.50
Tinning.....	11.82	9.19	.....	21.01
Gas engines.....	12.90	7.52	.....	20.42
Heating.....	.....	.....	27.74	27.74
Material drawn by janitor.....	.....	4.21	.....	4.21
Total.....	105.28	57.17	27.74	190.19
<i>Henry School, No. 83.</i>				
Carpentering.....	59.57	21.68	.....	81.25
Painting.....	392.18	59.95	.....	452.13
Tinning.....	23.88	2.06	.....	25.94
Steamfitting.....	125.64	27.38	.....	153.02
Slate treads, etc.....	231.00	24.00	.....	255.00
Material drawn by janitor.....	.....	16.75	.....	16.75
Total.....	832.27	151.82	.....	984.09
<i>High Street School, No. 1.</i>				
Carpentering.....	3.50	2.17	.....	5.67
<i>Hillsdale School, No. 20.</i>				
Carpentering.....	17.00	4.62	.....	21.62
<i>Hilton School, No. 115.</i>				
Carpentering.....	18.69	7.99	.....	26.68
Painting.....	4.44	2.07	.....	6.51
Tinning.....	9.44	2.24	.....	11.68
Gas engines.....	15.54	7.15	.....	22.69
Heating.....	.....	.....	24.79	24.79
Material drawn by janitor.....	.....	2.91	.....	2.91
Total.....	48.11	22.36	24.79	95.26
<i>Hubbard School, No. 119.</i>				
Carpentering.....	12.35	13.29	.....	25.64
Painting.....	10.69	4.49	.....	15.18
Tinning.....	10.32	5.03	.....	15.35
Gas engines.....	25.55	9.26	.....	34.81
Heating.....	.....	.....	28.29	28.29
Material drawn by janitor.....	.....	1.56	.....	1.56
Total.....	58.91	33.63	28.29	120.83
<i>Hyde School, No. 147.</i>				
Carpentering.....	28.85	7.35	.....	36.20
Painting.....	56.13	20.32	.....	76.45
Tinning.....	13.50	3.27	.....	16.77
Gas engines.....	17.30	3.89	.....	21.19
Heating.....	.....	.....	25.70	25.70
Total.....	115.78	34.83	25.70	176.31
<i>Ivy City School, No. 106.</i>				
Carpentering.....	23.96	30.79	.....	54.75
Painting.....	.44	.06	.....	.50
Tinning.....	8.26	2.39	.....	10.65
Total.....	32.66	33.24	.....	65.90
<i>Jackson School, No. 69.</i>				
Carpentering.....	36.60	89.28	.....	125.88
Painting.....	5.37	1.41	.....	6.78
Tinning.....	30.06	13.28	.....	43.34
Heating.....	.....	.....	39.43	39.43
Material drawn by janitor.....	.....	1.55	.....	1.55
Total.....	72.03	105.52	39.43	216.98

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Jefferson School, No. 23.</i>				
Carpentering.....	\$131.14	\$68.04		\$199.18
Painting.....	210.93	37.90		248.83
Tinning.....	58.44	29.43		87.87
Steamfitting.....	88.08	6.09		94.17
Material drawn by janitor.....		11.10		11.10
Total.....	488.59	152.56		641.15
<i>Johnson School, No. 95.</i>				
Carpentering.....	18.91	6.40		25.31
Painting.....	2.00	.20		2.20
Tinning.....	24.57	4.64		29.21
Heating.....			\$132.60	132.60
Material drawn by janitor.....		8.09		8.09
Total.....	45.48	19.33	132.60	197.41
<i>Johnson School Annex, No. 21.</i>				
Carpentering.....	15.00	3.11		18.11
Painting.....	.87	.26		1.13
Tinning.....	31.00	12.81		43.81
Total.....	46.87	16.18		63.05
<i>Jones School, No. 77.</i>				
Carpentering.....	40.63	25.95		66.58
Painting.....	213.37	29.31		241.68
Tinning.....	41.57	23.17		64.74
Heating.....			231.30	231.30
Material drawn by janitor.....		9.99		9.99
Total.....	295.57	88.42	231.30	615.29
<i>Kenilworth School, No. 128.</i>				
Carpentering.....	62.54	39.34		101.88
Painting.....	85.92	18.16		104.08
Tinning.....	33.56	20.18		53.74
Gas engines.....	16.38	37.28		53.66
Heating.....			39.37	39.37
Installation of motor.....			200.00	200.00
Miscellaneous.....			20.00	20.00
Material drawn by janitor.....		3.58		3.58
Total.....	198.40	118.54	259.37	576.31
<i>Ketcham School, No. 149.</i>				
Carpentering.....	155.41	114.56		269.97
Painting.....	5.37	1.72		7.09
Tinning.....	5.50	.36		5.86
Gas engines.....	18.29	.50		18.79
Grading, screenings, and coping.....	31.00	121.00		152.00
Material drawn by janitor.....		4.44		4.44
Total.....	215.57	242.58		458.15
<i>Langdon School, No. 108.</i>				
Carpentering.....	171.03	224.83		395.86
Painting.....	32.75	19.93		52.68
Tinning.....	67.50	34.19		101.69
Grading and trenching.....	221.40			221.40
Heating.....			4.50	4.50
Material drawn by janitor.....		4.82		4.82
Total.....	492.68	283.77	4.50	780.95
<i>Langston School, No. 132.</i>				
Carpentering.....	35.25	21.18		56.43
Painting.....	150.50	27.93		178.43
Tinning.....	17.88	3.28		21.16
Gas engines.....	21.78	8.00		29.78
Heating.....			45.65	45.65
Material drawn by janitor.....		.70		.70
Total.....	225.41	61.09	45.65	332.15

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Lenox School, No. 67.</i>				
Carpentering.....	\$87.66	\$129.30	.....	\$216.96
Painting.....	80.62	21.39	.....	102.01
Tinning.....	12.70	6.10	.....	18.80
Grading and constructing wall.....	324.26	23.43	.....	347.69
Heating.....	.....	.....	\$29.22	29.22
Material drawn by janitor.....	.....	2.39	.....	2.39
Total.....	505.24	182.61	29.22	717.07
<i>Lincoln School, No. 18.</i>				
Carpentering.....	32.75	18.29	.....	51.04
Painting.....	2.62	.82	.....	3.44
Tinning.....	243.94	95.66	.....	339.60
Steamfitting.....	6.44	.25	.....	6.69
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	285.75	115.72	.....	401.47
<i>Logan School, No. 90.</i>				
Carpentering.....	90.92	141.63	.....	232.55
Painting.....	12.99	4.48	.....	17.47
Tinning.....	32.76	14.72	.....	47.48
Heating.....	.....	.....	114.46	114.46
Material drawn by janitor.....	.....	2.96	.....	2.96
Total.....	136.67	163.79	114.46	414.92
<i>Lovejoy School, No. 124.</i>				
Carpentering.....	52.60	67.69	.....	120.29
Painting.....	12.56	4.68	.....	17.24
Tinning.....	20.83	2.75	.....	23.58
Gas engines.....	27.93	25.87	.....	53.80
Grading and fencing.....	499.62	140.00	.....	639.62
Heating.....	.....	.....	66.47	66.47
Miscellaneous.....	12.25	.50	.....	12.75
Material drawn by janitor.....	.....	12.86	.....	12.86
Total.....	625.79	254.35	66.47	946.61
<i>Ludlow School, No. 142.</i>				
Carpentering.....	70.84	23.64	.....	94.48
Painting.....	5.94	1.86	.....	7.80
Tinning.....	140.94	250.57	.....	391.51
Gas engines.....	16.07	8.48	.....	24.55
Grading.....	3.00	.....	.....	3.00
Heating.....	.....	.....	48.05	48.05
Material drawn by janitor.....	.....	6.09	.....	6.09
Total.....	236.79	290.64	48.05	575.48
<i>M Street High School, No. 82.</i>				
Carpentering.....	164.39	141.75	.....	306.14
Painting.....	158.63	28.71	.....	187.34
Tinning.....	35.19	23.44	.....	58.63
Steamfitting.....	15.88	.21	.....	16.09
Weather stripping windows, etc.....	.....	.....	253.11	253.11
Material drawn by janitor.....	.....	2.81	.....	2.81
Total.....	374.09	196.92	253.11	824.12
<i>Madison School, No. 71.</i>				
Carpentering.....	37.19	75.02	.....	112.21
Painting.....	7.75	2.15	.....	9.90
Tinning.....	186.44	77.76	.....	264.20
Grading.....	2.63	.....	.....	2.63
Heating.....	.....	.....	85.73	85.73
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	234.01	155.63	85.73	475.37
<i>Magruder School, No. 62.</i>				
Carpentering.....	44.65	91.81	.....	136.46
Painting.....	133.31	16.11	.....	149.42
Tinning.....	35.19	23.43	.....	58.62
Heating.....	.....	.....	12.02	12.02
Material drawn by janitor.....	.....	3.11	.....	3.11
Total.....	213.15	134.46	12.02	359.63

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Maury School, No. 55.</i>				
Carpentering.....	\$128.28	\$174.48	.....	\$302.76
Painting.....	17.93	2.68	.....	20.61
Tinning.....	67.47	28.12	.....	95.59
Gas engines.....	38.94	15.95	.....	54.89
Heating.....	.....	.....	\$11.60	11.60
Miscellaneous.....	6.00	1.50	.....	7.50
Material drawn by janitor.....	.....	10.92	.....	10.92
Total.....	258.62	233.65	11.60	503.87
<i>McCormick School, No. 16.</i>				
Painting.....	5.00	1.75	.....	6.75
<i>McKinley Manual Training School, No. 130.</i>				
Carpentering.....	124.50	26.78	.....	151.28
Painting.....	16.37	7.95	.....	24.32
Miscellaneous.....	.....	7.50	.....	7.50
Total.....	140.87	42.23	.....	183.10
<i>Military Road School, No. 8.</i>				
Carpentering.....	17.41	21.71	.....	39.12
Tinning.....	31.64	18.90	.....	50.54
Miscellaneous.....	16.75	.....	.....	16.75
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	65.80	41.31	.....	107.11
<i>Military Road Annex.</i>				
Carpentering.....	12.50	1.44	.....	13.94
Heating.....	.....	.....	3.00	3.00
Total.....	12.50	1.44	3.00	16.94
<i>Monroe School, No. 72.</i>				
Carpentering.....	50.01	23.26	.....	73.27
Painting.....	6.06	1.97	.....	8.03
Tinning.....	19.69	7.19	.....	26.88
Heating.....	.....	.....	100.13	100.13
Total.....	75.76	32.42	100.13	208.31
<i>Montgomery School, No. 140.</i>				
Carpentering.....	80.34	55.57	.....	135.91
Painting.....	5.19	2.38	.....	7.57
Tinning.....	200.50	53.78	.....	254.28
Gas engines.....	5.65	4.30	.....	9.95
Heating.....	.....	.....	23.02	23.02
Miscellaneous.....	63.00	.....	.....	63.00
Material drawn by janitor.....	.....	5.85	.....	5.85
Total.....	354.68	121.88	23.02	499.58
<i>Morgan School, No. 125.</i>				
Carpentering.....	8.50	2.54	.....	11.04
Painting.....	6.81	5.13	.....	11.94
Tinning.....	25.38	2.89	.....	28.27
Gas engines.....	16.25	24.19	.....	40.44
Heating.....	.....	.....	59.52	59.52
Total.....	56.94	34.75	59.52	151.21
<i>Morse School, No. 44.</i>				
Carpentering.....	31.47	41.67	.....	73.14
Painting.....	24.31	6.46	.....	30.77
Tinning.....	33.18	8.10	.....	41.28
Gas engines.....	28.04	17.23	.....	45.27
Heating.....	.....	.....	852.94	852.94
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	117.00	74.16	852.94	1,044.10
<i>Mott School, No. 40.</i>				
Carpentering.....	37.05	20.22	.....	57.27
Painting.....	2.25	.79	.....	3.04
Tinning.....	21.51	4.82	.....	26.33
Material drawn by janitor.....	.....	2.00	.....	2.00
Total.....	60.81	27.83	.....	88.64

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Orr School, No. 122.</i>				
Carpentering.....	\$44.00	\$38.26		\$82.26
Painting.....	56.87	23.00		79.87
Grading.....	19.00			19.00
Heating.....			\$27.04	27.04
Material drawn by janitor.....		5.02		5.02
Total.....	119.87	66.28	27.04	213.19
<i>Patterson School, No. 93.</i>				
Carpentering.....	1.50	.21		1.71
Painting.....	7.00	3.00		10.00
Heating.....			53.47	53.47
Material drawn by janitor.....		3.58		3.58
Total.....	8.50	6.79	53.47	68.76
<i>Payne School, No. 98.</i>				
Carpentering.....	12.38	9.07		21.45
Painting.....	9.44	2.32		11.76
Tinning.....	11.69	2.01		13.70
Gas engines.....	12.40	9.31		21.71
Heating.....			30.22	30.22
Material drawn by janitor.....		.72		.72
Total.....	45.91	23.43	30.22	99.56
<i>Peabody School, No. 31.</i>				
Carpentering.....	36.89	25.57		62.46
Painting.....	16.87	5.65		22.52
Tinning.....	2.06	.83		2.89
Steam fitting.....	4.75			4.75
Material drawn by janitor.....		9.24		9.24
Total.....	60.57	41.29		101.86
<i>Petworth School, No. 121</i>				
Carpentering.....	51.94	30.09		82.03
Painting.....	14.82	6.17		20.99
Tinning.....	24.51	8.10		32.61
Gas engines.....	41.43	1.86		43.29
Heating.....			397.34	397.34
Material drawn by janitor.....		6.47		6.47
Total.....	132.70	52.69	397.34	582.73
<i>Phelps School, No. 57.</i>				
Carpentering.....	52.02	115.93		167.95
Painting.....	231.87	37.50		269.37
Tinning.....	25.82	7.03		32.85
Heating.....			33.32	33.32
Material drawn by janitor.....		3.16		3.16
Total.....	309.71	163.62	33.32	506.65
<i>Phillips School, No. 81.</i>				
Carpentering.....	131.09	181.67		312.76
Painting.....	104.32	28.42		132.74
Tinning.....	28.06	11.12		39.18
Grading.....	126.63			126.63
Heating.....			28.13	28.13
Total.....	390.10	221.21	28.13	639.44
<i>Pierce School, No. 94.</i>				
Carpentering.....	50.75	96.24		146.99
Painting.....	50.81	10.45		61.26
Grading.....	4.13			4.13
Heating.....			8.53	8.53
Material drawn by janitor.....		7.59		7.59
Total.....	105.69	114.28	8.53	228.50
<i>Polk School, No. 86.</i>				
Carpentering.....	70.38	120.14		190.52
Painting.....	31.19	10.94		42.13
Tinning.....	22.94	7.58		30.52
Grading.....	24.38	2.80		27.18
Heating.....			210.72	210.72
Miscellaneous.....	3.75	.25		4.00
Material drawn by janitor.....		5.94		5.94
Total.....	152.64	147.65	210.72	511.01

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Potomac School, No. 17.</i>				
Carpentering.....	\$37.41	\$22.98	.....	\$60.39
Painting.....	4.94	2.11	.....	7.05
Tinning.....	41.56	5.56	.....	47.12
Material drawn by janitor.....	.....	1.95	.....	1.95
Total.....	83.91	32.60	.....	116.51
<i>Randall School, No. 28.</i>				
Carpentering.....	110.35	203.55	.....	313.90
Painting.....	29.00	11.08	.....	40.08
Tinning.....	29.88	3.61	.....	33.49
Grading.....	3.00	.....	.....	3.00
Heating.....	.....	.....	\$154.38	154.38
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	172.23	218.94	154.38	545.55
<i>Reno School, No. 159.</i>				
Carpentering.....	56.43	36.31	.....	92.74
Painting.....	6.13	2.28	.....	8.41
Tinning.....	7.00	5.56	.....	12.56
Heating.....	.....	.....	28.13	28.13
Total.....	69.56	44.15	28.13	141.84
<i>Reservoir School, No. 110.</i>				
Carpentering.....	37.00	33.66	.....	70.66
Painting.....	114.76	20.42	.....	135.18
Tinning.....	26.44	3.46	.....	29.90
Heating.....	.....	.....	2.75	2.75
Total.....	178.20	57.54	2.75	238.49
<i>Ross School, No. 146.</i>				
Carpentering.....	40.19	29.96	.....	70.15
Painting.....	7.44	2.05	.....	9.49
Tinning.....	40.39	3.44	.....	43.83
Electric motor.....	4.14	.20	.....	4.34
Heating.....	.....	.....	18.44	18.44
Material drawn by janitor.....	.....	1.25	.....	1.25
Total.....	92.16	36.90	18.44	147.50
<i>Seaton School, No. 22.</i>				
Carpentering.....	126.62	146.70	.....	273.32
Painting.....	54.12	23.53	.....	77.65
Tinning.....	26.00	15.62	.....	41.62
Steam fitting.....	209.77	23.98	.....	233.75
Material drawn by janitor.....	.....	10.67	.....	10.67
Total.....	416.51	220.50	.....	637.01
<i>Simmons School, No. 134.</i>				
Carpentering.....	6.25	3.36	.....	9.61
Painting.....	75.81	25.21	.....	101.02
Tinning.....	10.31	1.78	.....	12.09
Gas engines.....	4.52	.59	.....	5.11
Reconstructing furnaces.....	.....	.....	487.78	487.78
Material drawn by janitor.....	.....	8.76	.....	8.76
Total.....	96.89	39.70	487.78	624.37
<i>Slater School, No. 80.</i>				
Carpentering.....	86.10	128.23	.....	214.33
Painting.....	156.50	29.39	.....	185.89
Tinning.....	24.75	6.18	.....	30.93
Heating.....	.....	.....	40.40	40.40
Material drawn by janitor.....	.....	3.09	.....	3.09
Total.....	267.35	166.89	40.40	474.64
<i>Smallwood School, No. 64.</i>				
Carpentering.....	78.85	171.53	.....	250.38
Painting.....	187.12	32.34	.....	219.46
Tinning.....	13.06	3.64	.....	16.70
Heating.....	.....	.....	72.07	72.07
Material drawn by janitor.....	.....	6.90	.....	6.90
Total.....	279.03	214.41	72.07	565.51

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Smothers School, No. 56.</i>				
Carpentering.....	\$52.69	\$44.25	.....	\$96.94
Painting.....	4.94	1.63	.....	6.57
Tinning.....	64.94	17.62	.....	82.56
Miscellaneous.....	10.00	.....	.....	10.00
Material drawn by janitor.....	.....	.33	.....	.33
Total.....	132.57	63.83	.....	196.40
<i>Stanton School, No. 138.</i>				
Carpentering.....	21.33	16.08	.....	37.41
Painting.....	3.19	.61	.....	3.80
Tinning.....	14.50	6.48	.....	20.98
Grading.....	62.50	3.00	.....	65.50
Heating.....	.....	.....	\$72.23	72.23
Material drawn by janitor.....	.....	.70	.....	.70
Do.....	.....	2.94	.....	2.94
Total.....	101.52	29.81	72.23	203.56
<i>Stevens School, No. 97.</i>				
Carpentering.....	30.88	46.61	.....	77.49
Painting.....	1.00	7.61	.....	8.61
Tinning.....	54.00	12.90	.....	66.90
Steam fitting.....	41.25	17.01	.....	58.26
Material drawn by janitor.....	.....	14.54	.....	14.54
Total.....	142.13	98.37	.....	240.50
<i>Sumner School, No. 19.</i>				
Carpentering.....	44.38	21.51	.....	65.89
Painting.....	317.25	69.19	.....	386.44
Tinning.....	20.63	3.77	.....	24.40
Steam fitting.....	32.93	7.82	.....	40.75
Material drawn by janitor.....	.....	1.95	.....	1.95
Total.....	415.19	104.24	.....	519.43
<i>Syphaz School, No. 126.</i>				
Carpentering.....	47.71	18.14	.....	65.85
Painting.....	13.43	6.13	.....	19.56
Tinning.....	22.69	1.40	.....	24.09
Steam fitting.....	10.50	1.03	.....	11.53
Material drawn by janitor.....	.....	4.37	.....	4.37
Total.....	94.33	31.07	.....	125.40
<i>Takoma School, No. 118.</i>				
Carpentering.....	67.32	21.67	.....	88.99
Painting.....	148.56	52.89	.....	201.45
Tinning.....	40.56	8.00	.....	48.56
Gas engines.....	12.64	13.10	.....	25.74
Heating.....	.....	.....	12.09	12.09
Total.....	269.08	95.66	12.09	376.83
<i>Taylor School, No. 88.</i>				
Carpentering.....	41.65	110.35	.....	152.00
Painting.....	23.00	6.26	.....	29.26
Tinning.....	20.56	10.62	.....	31.18
Heating.....	.....	.....	21.68	21.68
Material drawn by janitor.....	.....	5.05	.....	5.05
Total.....	85.21	132.28	21.68	239.17
<i>Tenley School, No. 102.</i>				
Carpentering.....	35.00	111.00	.....	146.00
Painting.....	11.56	3.98	.....	15.54
Tinning.....	163.32	58.04	.....	221.36
Steamfitting.....	10.19	2.57	.....	12.76
Grading.....	3.38	.....	.....	3.38
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	223.45	176.29	.....	399.74

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Thomson School, No. 29.</i>				
Carpentering.....	\$16.63	\$12.77		\$29.40
Painting.....	5.49	1.55		7.04
Tinning.....	21.76	4.22		25.98
Heating.....			\$15.98	15.98
Material drawn by janitor.....		4.06		4.06
Total.....	43.88	22.60	15.98	82.46
<i>Threlkeld School, No. 14.</i>				
Carpentering.....	60.00	164.04		224.04
Painting.....	9.56	2.39		11.95
Tinning.....	3.44	4.92		8.36
Miscellaneous.....		5.00		5.00
Material drawn by janitor.....		.70		.70
Total.....	73.00	177.05		250.05
<i>Toner School, No. 114.</i>				
Carpentering.....	36.90	31.67		68.57
Painting.....	3.18	2.24		5.42
Tinning.....	24.37	10.03		34.40
Gas engines.....	39.43	49.68		89.11
Heating.....			12.09	12.09
Material drawn by janitor.....		4.51		4.51
Total.....	103.88	98.13	12.09	214.10
<i>Towers School, No. 59.</i>				
Carpentering.....	73.84	93.05		166.89
Painting.....	11.00	6.03		17.03
Tinning.....	20.63	1.27		21.90
Miscellaneous.....	7.50			7.50
Heating.....			41.75	41.75
Material drawn by janitor.....		5.95		5.95
Total.....	112.97	106.30	41.75	261.02
<i>Twining School, No. 45.</i>				
Carpentering.....	35.13	35.73		70.86
Painting.....	120.75	19.98		140.73
Tinning.....	105.44	37.54		142.98
Gas engines.....	9.40	3.99		13.39
Grading.....	34.50			34.50
Heating.....			20.18	20.18
Material drawn by janitor.....		5.37		5.37
Total.....	305.22	102.61	20.18	428.01
<i>Tyler School, No. 83.</i>				
Carpentering.....	52.90	111.28		164.18
Painting.....	11.89	3.28		15.17
Tinning.....	43.90	17.31		61.21
Heating.....			69.13	69.13
Miscellaneous.....	2.25	.50		2.75
Material drawn by janitor.....		5.80		5.80
Total.....	110.94	138.17	69.13	318.24
<i>Van Buren School, No. 87.</i>				
Carpentering.....	43.76	15.63		59.39
Painting.....	9.31	2.44		11.75
Tinning.....	40.82	4.68		45.50
Heating.....			58.05	
Material drawn by janitor.....		.70		.70
Total.....	93.89	23.45	58.05	175.39
<i>Van Buren Annex, No. 38.</i>				
Carpentering.....	24.10	16.28		40.38
Painting.....	3.25	1.84		5.09
Tinning.....	11.00	2.99		13.99
Total.....	38.35	21.11		59.46
<i>Van Ness School, No. 150.</i>				
Carpentering.....	5.79	3.45		9.24
Painting.....	2.50	2.27		4.77
Gas engines.....	13.29	2.75		16.04
Heating, new grates.....			17.05	17.05
Material drawn by janitor.....		3.19		3.19
Total.....	21.58	11.66	17.05	50.29

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Wallach School, No. 4.</i>				
Carpentering.....	\$79.88	\$44.10	.....	\$123.98
Painting.....	36.00	13.84	.....	49.84
Tinning.....	70.07	16.72	.....	86.79
Miscellaneous.....	16.00	3.52	.....	19.52
Do.....	8.25	3.00	.....	11.25
Material drawn by janitor.....	.....	10.27	.....	10.27
Total.....	210.20	91.45	.....	301.65
<i>Webb School, No. 121.</i>				
Carpentering.....	8.94	3.94	.....	12.88
Painting.....	119.07	17.95	.....	137.02
Tinning.....	9.50	4.82	.....	14.32
Gas engines.....	18.96	5.06	.....	24.02
Heating.....	.....	.....	\$34.15	34.15
Material drawn by janitor.....	.....	6.55	.....	6.55
Total.....	156.47	38.32	34.15	228.94
<i>Webster School, No. 51.</i>				
Carpentering.....	66.94	38.21	.....	105.15
Painting.....	27.20	6.47	.....	33.67
Tinning.....	85.32	41.87	.....	127.19
Steam fitting.....	21.39	1.00	.....	22.39
Heating.....	.....	.....	2.64	2.64
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	200.85	88.25	2.64	291.74
<i>Weightman School, No. 54.</i>				
Carpentering.....	63.31	112.45	.....	175.76
Painting.....	144.81	28.71	.....	173.52
Tinning.....	23.25	1.84	.....	25.09
Heating.....	.....	.....	17.44	17.44
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	231.37	143.70	17.44	392.51
<i>Western High School, No. 117.</i>				
Carpentering.....	244.82	236.69	.....	481.51
Painting.....	233.18	60.62	.....	293.80
Tinning.....	40.25	9.42	.....	49.67
Steam fitting.....	16.97	10.59	.....	27.56
Do.....	.....	6.25	.....	6.25
Material drawn by janitor.....	.....	13.19	.....	13.19
Total.....	* 535.22	336.76	.....	871.98
<i>Wheatley School, No. 136.</i>				
Carpentering.....	13.50	4.00	.....	17.50
Painting.....	122.62	28.84	.....	151.46
Tinning.....	20.38	3.92	.....	24.30
Gas engines.....	6.76	3.70	.....	10.46
Heating.....	.....	.....	11.00	11.00
Material drawn by janitor.....	.....	7.31	.....	7.31
Total.....	163.26	47.77	11.00	222.03
<i>Wilson School, No. 89.</i>				
Carpentering.....	11.06	6.18	.....	17.24
Painting.....	6.62	2.11	.....	8.73
Tinning.....	156.38	64.70	.....	221.08
Heating.....	.....	.....	57.10	57.10
Material drawn by janitor.....	.....	.61	.....	.61
Total.....	174.06	73.60	57.10	304.76
<i>Woodburn School, No. 101.</i>				
Carpentering.....	14.50	22.68	.....	37.18
Painting.....	7.12	1.18	.....	8.30
Tinning.....	62.25	22.88	.....	85.13
Furnaces.....	.....	.....	204.00	204.00
Material drawn by janitor.....	.....	.70	.....	.70
Total.....	83.87	47.44	204.00	335.31

Repairs and improvements to school buildings and grounds, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Wormley School, No. 49.</i>				
Carpentering.....	\$5.00	\$2.45	.....	\$7.45
Painting.....	4.00	1.59	.....	5.59
Tinning.....	42.25	12.79	.....	55.04
Gas engines.....	19.37	7.17	.....	26.54
Remodeling furnaces.....	.....	.....	\$304.57	304.57
Material drawn by janitor.....	.....	1.12	.....	1.12
Total.....	70.62	25.12	304.57	400.31

SUMMARY.

Total accounted for on written orders.....	\$52,591.43
Miscellaneous time consumed in shop and schools.....	12,875.69
Material drawn from shop for use in various schools.....	2,293.00
Purchase of forage.....	466.08
Purchase of mules.....	205.80
Telephone service, residence of superintendent.....	36.00
Horseshoeing.....	76.96
Material on hand.....	6,280.04
Unexpended.....	175.00
Total.....	75,000.00

Buildings and grounds, public schools, District of Columbia, 1908-9, repairs to buildings, fire protection, etc.

[Appropriation, \$50,000.]

BY SHOP.

Name of school.	Labor.	Material.	Contract.	Total.
Abbot, No. 27.....	\$95.96	\$72.99	\$320.00	\$488.95
Adams, No. 65.....	1.69	.04	.....	1.73
Addison, No. 53.....	39.94	26.45	.....	66.39
Ambush, No. 79.....	29.94	25.57	1,380.00	1,435.51
Amidon, No. 42.....	25.56	16.22	1,313.00	1,354.78
Armstrong Manual Training, No. 129.....	30.38	11.02	.....	41.40
Arthur, No. 70.....	.85	.04	.....	.89
Banneker, No. 39.....	80.32	39.11	1,299.00	1,418.43
Bell, No. 78.....	2.63	.04	.....	2.67
Benning, No. 48.....	.....	.....	882.82	882.82
Berret, No. 66.....	33.47	13.64	319.00	366.11
Birney, No. 127.....	39.25	23.21	.....	62.46
Birney Annex.....	376.71	267.98	.....	644.69
Blair, No. 50.....	14.94	17.30	670.00	702.24
Blake, No. 61.....	18.03	17.98	696.50	732.51
Blow, No. 145.....	1.50	.33	.....	1.83
Bradley, No. 60.....	1.75	.04	.....	1.79
Brent, No. 46.....	114.18	52.68	.....	166.86
Briggs, No. 75.....	2.53	.04	.....	2.57
Brightwood, No. 104.....	331.95	201.82	2,251.50	2,785.27
Brookland, No. 103.....	.....	.....	2,251.50	2,251.50
Bruce, No. 112.....	40.50	29.20	.....	69.70
Buchanan, No. 96.....	10.08	8.93	.....	19.01
Burrville, No. 91.....	142.71	134.59	.....	277.35
Business High, No. 144.....	9.00	4.46	.....	13.46
Carbery, No. 58.....	17.41	32.26	1,393.00	1,442.67
Cardozo, No. 148.....	17.32	10.79	.....	28.11
Central High, No. 43.....	143.99	70.15	229.00	443.14
Chain Bridge Road, No. 6.....	16.00	11.17	.....	27.17
Conduit Road, No. 25.....	24.00	13.30	.....	37.30
Congress Heights, No. 111.....	39.63	16.93	.....	56.56
Cook, J. F., No. 30.....	1.50	1.44	.....	2.94
Cook, H. D., No. 154.....	.....	40.41	.....	40.41
Cranch, No. 137.....	1.00	2.52	1,988.00	1,991.52
Curtis, No. 26.....	150.44	58.12	265.00	473.56
Deanwood, No. 152.....	95.07	148.80	877.25	1,121.12
Douglass, No. 99.....	.....	.04	.....	.04
Eastern High, No. 85.....	82.44	17.15	210.00	309.59
Eckington, No. 116.....	1.00	5.62	.....	6.62
Edmonds, No. 135.....	29.81	9.34	.....	39.15
Fillmore, No. 92.....	3.00	8.80	.....	11.80
Force, No. 32.....	120.50	31.63	250.00	402.13
Fort Slocum, No. 11.....	7.50	2.30	.....	9.80
Franklin, No. 15.....	.50	.54	240.00	241.04
Gales, No. 36.....	80.07	22.04	210.00	312.13
Garnet, No. 34.....	94.00	23.10	236.00	353.10
Garrison, No. 76.....	57.40	23.58	1,374.00	1,454.98
Giddings, No. 63.....	11.15	21.83	1,373.00	1,405.98

Buildings and grounds, public schools, District of Columbia, 1908-9, etc.—Continued.

BY SHOP—Continued.

Name of school.	Labor.	Material.	Contract.	Total.
Grant, No. 41.....			\$230.00	\$230.00
Greenleaf, No. 105.....	\$6.88	\$6.85		13.73
Hamilton, No. 37.....			809.00	809.00
Hayes, No. 107.....	.85	.04		.89
Henry, No. 33.....	164.91	41.86	250.00	456.77
Hilton, No. 115.....	.85	.04		.89
Hubbard, No. 119.....	95.41	51.85	322.00	469.26
Hyde, No. 147.....	11.00	11.80		22.80
Jackson, No. 69.....	19.25	19.00	696.50	734.75
Jefferson, No. 23.....	82.51	37.88	242.00	362.39
Johnson, No. 95.....	85.25	35.59		120.84
Johnson Annex, No. 21.....	240.11	200.79		440.90
Jones, No. 77.....	14.06	10.02		24.08
Kenilworth, No. 128.....	54.88	27.57		82.45
Ketcham, No. 149.....	2.00	12.52		14.52
Langdon, No. 108.....	55.50	81.42		136.92
Langston, No. 132.....	67.01	10.72		77.73
Lenox, No. 67.....	25.28	16.94		42.22
Lincoln, No. 18.....	146.08	74.34	200.00	420.42
Logan, No. 90.....	51.37	20.42	696.00	767.79
Lovejoy, No. 124.....	48.87	56.01		104.88
M Street High, No. 82.....	47.20	57.35	265.00	369.55
Madison, No. 71.....	15.96	11.57	1,380.00	1,407.53
Magruder, No. 62.....	18.47	19.72	1,393.00	1,431.91
Maury, No. 55.....	118.99	48.80		167.79
McCormick, No. 16.....	6.00	4.05		10.05
Military Road and Annex.....	12.62	4.34		16.96
Monroe, No. 72.....	19.69	16.38	687.00	723.07
Montgomery, No. 140.....	10.00	15.60		25.60
Morgan, No. 125.....	60.38	17.37	3.50	81.25
Morse, No. 44.....	125.09	63.38		188.47
Mott, No. 40.....	164.68	141.85		306.53
Orr, No. 122.....	31.37	13.03		44.40
Patterson, No. 93.....	17.88	7.72		25.60
Payne, No. 98.....	6.09	25.21		31.30
Peabody, No. 31.....	118.44	28.97	210.00	357.41
Petworth, No. 131.....	66.41	105.18		171.59
Phelps, No. 57.....	4.37	.04	1,372.00	1,376.41
Phillips, No. 81.....	17.87	17.01	687.00	721.88
Pierce, No. 94.....	37.46	32.30		69.76
Polk, No. 86.....	19.06	20.17		39.23
Potomac, No. 17.....	289.75	207.86		497.61
Randall, No. 28.....	71.50	34.33	207.50	313.33
Reno, No. 139.....	8.25	9.33		17.58
Reservoir, No. 110.....	.50	3.27		3.77
Ross, No. 146.....	.69	.73		1.42
Seaton, No. 22.....	69.93	13.29	200.00	283.22
Simmons, No. 134.....	35.72	27.78		63.50
Slater, No. 80.....	20.87	18.76		39.63
Smallwood, No. 64.....	31.81	36.51		58.32
Smothers, No. 56.....	11.50	13.22		24.72
Stevens, No. 97.....	139.61	30.38	297.00	466.99
Sumner, No. 19.....	91.06	59.50		150.56
Takoma, No. 118.....	29.79	20.59		50.38
Taylor, No. 88.....	.85	.04		.89
Tenley and Annex, No. 102.....	32.24	15.97	2,710.42	2,758.63
Thomson, No. 29.....			212.00	212.00
Threlkeld, No. 14.....			240.00	240.00
Towers, No. 59.....	114.87	35.05	1,393.00	1,542.92
Twining, No. 45.....	39.39	27.42		66.81
Tyler, No. 83.....	14.59	14.28		28.87
Van Buren, No. 87.....	22.55	19.87	1,588.00	1,630.42
Van Ness, No. 150.....	24.38	10.09		34.47
Webster, No. 51.....	77.31	29.27	192.00	298.58
Weightman, No. 54.....	14.44	3.69		18.13
Western High, No. 117.....	72.00	43.39		115.39
Wheatley, No. 136.....	48.12	11.80		59.92
Wilson, No. 89.....	7.19	8.88		16.07
Woodburn, No. 101.....			1,685.00	1,685.00
Wormley, No. 49.....	20.94	16.08	1,340.00	1,377.02

SUMMARY.

Total accounted for.....	\$48,957.45
Miscellaneous time on orders.....	660.41
Mules.....	245.00
Remodeling typewriter.....	54.00
Stationery, etc.....	51.42
Six punches.....	4.14
Unexpended.....	27.58
Total.....	50,000.00

Repairs and improvements to engine houses, 1909.

[Appropriation, \$9,000.]

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 1 engine house.</i>				
Carpentering.....	\$16.32	\$19.58	.....	\$35.90
Painting.....	24.25	10.33	.....	34.58
Tinning.....	14.88	8.57	.....	23.45
Plumbing.....	2.25	.....	.....	2.25
Total.....	57.70	38.48	.....	96.18
<i>No. 2 engine house.</i>				
Carpentering.....	79.16	42.31	.....	121.47
Painting.....	61.51	26.21	.....	87.72
Plumbing.....	11.00	13.45	.....	24.45
Cement floor and tracks.....	.....	.....	\$380.30	380.30
Total.....	151.67	81.97	380.30	613.94
<i>No. 4 engine house.</i>				
Carpentering.....	179.69	78.93	.....	258.62
Painting.....	2.81	.99	.....	3.80
Tinning.....	97.51	94.74	.....	192.25
Plumbing.....	24.63	12.43	.....	37.06
Grading.....	18.75	3.35	.....	22.10
Rewiring stalls.....	.....	.....	25.00	25.00
Material drawn by captain.....	.....	3.39	.....	3.39
Total.....	323.39	193.83	25.00	542.22
<i>No. 5 engine house.</i>				
Carpentering.....	10.95	.57	.....	11.52
Painting.....	1.00	.62	.....	1.62
Plumbing.....	11.31	.90	.....	12.21
Total.....	23.26	2.09	.....	25.35
<i>No. 6 engine house.</i>				
Carpentering.....	161.04	129.67	.....	290.71
Painting.....	9.06	3.76	.....	12.82
Tinning.....	6.50	2.71	.....	9.21
Plumbing.....	4.81	8.92	.....	13.73
Material drawn by captain.....	.....	.33	.....	.33
Total.....	181.41	145.39	.....	326.80
<i>No. 7 engine house.</i>				
Carpentering.....	85.63	56.21	.....	141.84
Painting.....	1.37	.42	.....	1.79
Tinning.....	6.25	8.57	.....	14.82
Plumbing.....	2.25	.06	.....	2.31
Material drawn by captain.....	.....	.26	.....	.26
Total.....	95.50	65.52	.....	161.02
<i>No. 8 engine house.</i>				
Carpentering.....	201.05	215.36	.....	416.41
Painting.....	88.50	23.32	.....	111.82
Tinning.....	53.75	26.45	.....	80.20
Plumbing.....	20.09	13.61	.....	33.70
Material drawn by captain.....	.....	2.42	.....	2.42
Total.....	363.39	281.16	.....	644.55
<i>No. 9 engine house.</i>				
Carpentering.....	25.01	2.53	.....	27.54
Painting.....	3.00	.41	.....	3.41
Tinning.....	20.75	11.00	.....	31.75
Plumbing.....	22.98	5.51	.....	28.49
Rewiring stalls.....	.....	.....	75.00	75.00
Material drawn by captain.....	.....	2.74	.....	2.74
Total.....	71.74	22.19	75.00	168.93

Repairs and improvements to engine houses, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 10 engine house.</i>				
Carpentering.....	\$17.63	\$11.26	.....	\$28.89
Painting.....	38.94	12.46	.....	51.40
Tinning.....	23.63	17.88	.....	41.51
Plumbing.....	7.19	2.67	.....	9.86
Material drawn by captain.....	.....	9.09	.....	9.09
Total.....	87.39	53.36	.....	140.75
<i>No. 11 engine house.</i>				
Carpentering.....	72.88	60.20	.....	133.08
Tinning.....	12.31	2.87	.....	15.18
Plumbing.....	4.13	.64	.....	4.77
Material drawn by captain.....	.....	40.52	.....	40.52
Total.....	89.32	104.23	.....	193.55
<i>No. 12 engine house.</i>				
Carpentering.....	57.32	29.10	.....	86.42
Painting.....	1.50	1.28	.....	2.78
Tinning.....	10.63	3.33	.....	13.96
Total.....	69.45	33.71	.....	103.16
<i>No. 13 engine house.</i>				
Carpentering.....	19.04	8.67	.....	27.71
Painting.....	6.50	.....	.....	6.50
Tinning.....	12.38	.....	.....	12.38
Plumbing.....	15.25	1.71	.....	16.96
Repairs to metal ceiling.....	.....	.....	\$6.00	6.00
Material drawn by captain.....	.....	.40	.....	.40
Total.....	53.17	10.78	6.00	69.95
<i>No. 14 engine house.</i>				
Carpentering.....	174.38	118.12	.....	292.50
Painting.....	54.13	19.68	.....	73.81
Tinning.....	27.76	12.76	.....	40.52
Plumbing.....	10.06	2.00	.....	12.06
Heating.....	2.50	11.20	.....	13.70
Rewiring stalls and metal ceilings.....	.....	.....	108.46	108.46
Material drawn by captain.....	.....	22.90	.....	22.90
Total.....	268.83	186.66	108.46	563.95
<i>No. 15 engine house.</i>				
Carpentering.....	25.74	20.56	.....	46.30
Painting.....	3.50	1.25	.....	4.75
Plumbing.....	9.18	6.14	.....	15.32
Total.....	38.42	27.95	.....	66.37
<i>No. 16 engine house.</i>				
Carpentering.....	54.01	62.62	.....	116.63
Painting.....	1.31	.44	.....	1.75
Tinning.....	1.00	3.04	.....	4.04
Plumbing.....	17.88	1.51	.....	19.39
Total.....	74.20	67.61	.....	141.81
<i>No. 17 engine house.</i>				
Carpentering.....	18.96	22.27	.....	41.23
Painting.....	4.00	.81	.....	4.81
Tinning.....	2.75	1.70	.....	4.45
Plumbing.....	2.88	.75	.....	3.63
Total.....	28.59	25.53	.....	54.12
<i>No. 18 engine house.</i>				
Carpentering.....	33.00	44.63	.....	77.63
Painting.....	1.00	.74	.....	1.74
Tinning.....	11.00	.....	.....	11.00
Plumbing.....	23.13	1.71	.....	24.84
Material drawn by captain.....	.....	5.19	.....	5.19
Total.....	68.13	52.27	.....	120.40

Repairs and improvements to engine houses, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 19 engine house.</i>				
Carpentering.....	\$0.57			\$0.57
Material drawn by captain.....		\$7.42		7.42
Total.....	.57	7.42		7.99
<i>No. 20 engine house.</i>				
Carpentering.....	7.68	1.64		9.32
Tinning.....	5.50			5.50
Plumbing.....	5.00	.35		5.35
Heating.....	2.00	7.00		9.00
Material drawn by captain.....		94.76		94.76
Total.....	20.18	103.75		123.93
<i>No. 21 engine house.</i>				
Carpentering.....	30.00	12.07		42.07
Painting.....	1.00	.07		1.07
Material drawn by captain.....		.03		.03
Total.....	31.00	12.17		43.17
<i>No. 1 truck house.</i>				
Carpentering.....	14.92	9.09		24.01
Painting.....	5.00	5.04		10.04
Tinning.....	26.88	11.99		38.87
Plumbing.....	3.07	8.76		11.83
Material drawn by captain.....		2.95		2.95
Total.....	49.87	37.83		87.70
<i>No. 2 truck house.</i>				
Carpentering.....	52.50	64.88		117.38
Painting.....	1.00	.37		1.37
Tinning.....	7.75	12.83		20.58
Plumbing.....	70.26	186.77		257.03
Rewiring latches.....			\$25.00	25.00
Material drawn by captain.....		.02		.02
Total.....	131.51	264.87	25.00	421.38
<i>No. 3 truck house.</i>				
Carpentering.....	163.67	143.33		307.00
Painting.....	91.94	22.29		114.23
Tinning.....	64.06	4.58		68.64
Plumbing.....	15.44	6.05		21.49
Wiring stalls and guards.....			16.60	16.60
Material drawn by captain.....		7.68		7.68
Total.....	335.11	183.93	16.60	535.64
<i>No. 4 truck house.</i>				
Carpentering.....	24.01	26.42		50.43
Painting.....	1.75	2.08		3.83
Tinning.....	30.06	57.80		87.86
Plumbing.....	2.75			2.75
Electric work on stalls.....	7.60			7.60
Material drawn by captain.....		1.44		1.44
Total.....	66.17	87.74		153.91
<i>No. 5 truck house.</i>				
Carpentering.....	58.44	63.53		121.97
Painting.....	84.44	26.33		110.77
Tinning.....	22.94	14.65		37.59
Plumbing.....	1.00			1.00
Heating.....	2.00	7.40		9.40
Total.....	168.82	111.91		280.73
<i>No. 6 truck house.</i>				
Carpentering.....	30.38	12.20		42.58
Tinning.....	6.88	.02		6.90
Plumbing.....	5.50	1.23		6.73
Heating.....	3.50	10.72		14.22
Door hinges.....			2.00	2.00
Material drawn by captain.....		15.62		15.62
Total.....	46.26	39.79	2.00	88.05

Repairs and improvements to engine houses, 1909—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 7 truck house.</i>				
Carpentering.....	\$14.93	\$38.50	.....	\$53.43
Painting.....	1.50	.75	.....	2.25
Tinning.....	13.76	4.05	.....	17.81
Plumbing.....	3.75	.....	.....	3.75
Material drawn by captain.....	.....	.21	.....	.21
Total.....	33.94	43.51	.....	77.45
<i>No. 1 chemical house.</i>				
Carpentering.....	6.14	6.24	.....	12.38
Tinning.....	15.13	.....	.....	15.13
Pump and repairs.....	2.00	22.70	.....	24.70
Total.....	23.27	28.94	.....	52.21
<i>No. 2 chemical house.</i>				
Carpentering.....	828.28	839.57	.....	1,667.85
Painting.....	50.87	32.49	.....	83.36
Tinning.....	75.32	74.72	.....	150.04
Plumbing.....	52.26	45.07	.....	97.33
Rewiring.....	.....	.....	\$76.40	76.40
Material drawn by captain.....	.....	1.70	.....	1.70
Total.....	1,006.73	993.55	76.40	2,076.68
<i>No. 3 chemical house.</i>				
Carpentering.....	10.50	.25	.....	10.75
Tinning.....	5.50	.....	.....	5.50
Material drawn by captain.....	.....	.40	.....	.40
Total.....	16.00	.65	.....	16.65
<i>No. 5 chemical house.</i>				
Carpentering.....	16.13	16.17	.....	32.30
Painting.....	.44	.15	.....	.59
Tinning.....	4.13	.55	.....	4.68
Pump and well repairs.....	.....	.....	28.48	28.48
Total.....	20.70	16.87	28.48	66.05
<i>Fire boat.</i>				
Plumbing.....	2.75	.....	.....	2.75
<i>Fire department stables.</i>				
Carpentering.....	127.77	158.96	.....	286.73
Tinning.....	11.00	26.45	.....	37.45
Plumbing.....	4.81	3.39	.....	8.20
Material drawn by stables.....	.....	4.41	.....	4.41
Total.....	143.58	193.21	.....	336.79
<i>Office of chief.</i>				
Tinning.....	1.00	.65	.....	1.65

SUMMARY.

Total accounted for on written orders.....	\$8,405.78
Miscellaneous time consumed in shop and in houses.....	348.71
Purchase of mules.....	24.50
Purchase of harness.....	11.00
Purchase of whitewashing outfit.....	8.07
Purchase of plow and plowshares.....	27.50
Material drawn from shop for use in various houses.....	174.44
Total.....	9,000.00

Metropolitan police, District of Columbia, 1909 (repairs to stations).

[Appropriation, \$5,500.]

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 1 police station.</i>				
Carpentering.....	\$108.24	\$112.25	.....	\$220.49
Painting.....	57.75	19.22	.....	76.97
Tinning.....	2.06	3.53	.....	5.59
Plumbing.....	294.24	486.91	.....	781.15
Material drawn by captain.....		1.72	.....	1.72
Total.....	462.29	623.63	.....	1,085.92
<i>No. 2 police station.</i>				
Carpentering.....	51.35	24.80	.....	76.15
Painting.....	2.50	.94	.....	3.44
Tinning.....	20.37	25.75	.....	46.12
Plumbing.....	18.88	4.91	.....	23.79
Material drawn by captain.....		1.16	.....	1.16
Total.....	93.10	57.56	.....	150.66
<i>No. 3 police station.</i>				
Carpentering.....	48.14	5.38	.....	53.52
Painting.....	2.25	.49	.....	2.74
Tinning.....	4.13		.....	4.13
Plumbing.....	43.88	20.86	.....	64.74
Grading.....	4.00		.....	4.00
Total.....	102.40	26.73	.....	129.13
<i>No. 4 police station.</i>				
Carpentering.....	64.20	16.08	.....	80.28
Painting.....	186.94	45.41	.....	232.35
Tinning.....	7.57	4.74	.....	12.31
Plumbing.....	7.69		.....	7.69
Material drawn by captain.....		.30	.....	.30
Total.....	266.40	66.53	.....	332.93
<i>No. 5 police station.</i>				
Carpentering.....	48.93	22.32	.....	71.27
Painting.....	236.06	89.03	.....	325.09
Tinning.....	5.50	2.35	.....	7.85
Plumbing.....	27.25	2.38	.....	29.86
Steamfitting.....	29.53	4.44	.....	34.00
Heating.....		.50	.....	.50
Material drawn by captain.....		.60	.....	.60
Total.....	347.27	121.62	.....	469.17
<i>No. 6 police station.</i>				
Carpentering.....	250.21	204.44	.....	454.65
Painting.....	65.50	16.17	.....	81.67
Tinning.....	3.94	4.15	.....	8.09
Plumbing.....	311.53	777.41	.....	1,088.94
Grating in transom.....			\$3.80	3.80
Total.....	631.18	1,002.17	3.80	1,637.15
<i>No. 7 police station.</i>				
Carpentering.....	46.11	23.90	.....	70.01
Painting.....	3.50	.77	.....	4.27
Tinning.....	8.69	4.68	.....	13.37
Plumbing.....	27.89	.56	.....	28.45
Material drawn by captain.....		.21	.....	.21
Total.....	86.19	30.12	.....	116.31
<i>No. 8 police station.</i>				
Carpentering.....	30.38	9.96	.....	40.34
Painting.....	2.44	1.13	.....	3.57
Tinning.....	14.44	8.23	.....	22.67
Plumbing.....	25.87	2.33	.....	28.20
Heating.....	2.00	3.50	.....	5.50
Material drawn by captain.....		.30	.....	.30
Total.....	75.13	25.45	.....	100.58

Metropolitan police, District of Columbia, 1909 (repairs to stations)—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 9 police station.</i>				
Carpentering.....	\$33.13	\$12.90	.....	\$46.03
Painting.....	22.44	6.25	.....	28.69
Tinning.....	26.81	12.55	.....	39.36
Plumbing.....	6.75	.76	.....	7.51
Total.....	89.13	32.46	.....	121.59
<i>No. 16 police station.</i>				
Carpentering.....	108.88	24.57	.....	134.45
Painting.....	3.00	.81	.....	3.81
Tinning.....	20.76	10.56	.....	31.32
Plumbing.....	41.10	25.73	.....	66.83
Steamfitting.....	18.50	7.50	.....	26.00
Total.....	192.24	69.17	.....	262.41
<i>Substation T.</i>				
Carpentering.....	33.00	117.22	.....	150.22
Painting.....	4.81	1.13	.....	5.94
Cement walk.....	.....	.....	\$25.00	25.00
Material drawn by captain.....	.....	.10	.....	.10
Total.....	37.81	118.45	25.00	181.26
<i>Harbor precinct.</i>				
Carpentering.....	5.00	3.86	.....	8.86
Painting.....	3.50	.89	.....	4.39
Tinning.....	13.75	4.43	.....	18.18
Material drawn by captain.....	.....	.10	.....	.10
Total.....	22.25	9.28	.....	31.53

SUMMARY.

Total accounted for.....	\$4,618.64
Miscellaneous time on orders.....	552.87
Telephone service.....	8.53
Plumbing material for No. 7 police station, installation of same charged to 1910 appropriation..	232.83
Stationery, mules, harness, etc.....	26.80
Erecting storm doors on various stations.....	18.30
Unexpended.....	42.03
Total.....	5,500.00

Public schools, District of Columbia, 1909 (repairs to plumbing).

[Appropriation, \$6,515.]

No.	Name of school.	Labor.	Material.	Total.	No.	Name of school.	Labor.	Material.	Total.
27	Abbot.....	\$50.45	\$4.42	\$54.87	103	Brookland.....	\$68.07	\$15.79	\$83.86
53	Addison.....	29.44	18.26	47.70	112	Bruce.....	5.25	1.34	6.59
79	Ambush.....	27.75	.70	28.45	155	Bryan.....	24.06	7.39	31.45
42	Amidon.....	8.82	2.05	10.87	96	Buchanan.....	23.85	15.07	38.92
129	Armstrong Manual Training.....	77.11	11.33	88.44	91	Burrville.....	7.44	12.83	20.27
70	Arthur.....	24.00	1.03	25.03	144	Business High.....	58.06	13.93	71.99
39	Banneker.....	11.01	3.84	14.85	58	Carbery.....	10.70	.25	10.95
78	Bell.....	33.82	6.93	40.75	148	Cardozo.....	19.51	.72	20.23
48	Benning.....	24.70	8.59	33.29	43	Central High.....	153.46	64.52	217.98
66	Berret.....	16.45	2.54	18.99	6	Chain Bridge Road.....	5.75	13.57	19.32
127	Birney.....	37.80	9.16	46.96	111	Congress Heights.....	5.75	10.35	16.10
50	Blair.....	22.19	7.76	29.95	30	Cook, J. F.....	98.76	27.85	126.61
61	Blake.....	16.26	8.98	25.24	68	Corcoran.....	14.75	.58	15.33
145	Blow.....	31.00	1.85	32.85	137	Cranich.....	8.56	.11	8.67
109	Bowen, A.....	23.75	1.63	25.38	26	Curtis.....	40.26	12.42	52.68
123	Bowen, S. J.....	4.31	.....	4.31	152	Deanwood.....	8.25	1.19	9.44
60	Bradley.....	15.76	3.09	18.85	32	Dennison.....	12.37	.41	12.78
46	Brent.....	36.94	12.13	49.07	120	Dent.....	23.06	7.78	30.84
75	Briggs.....	4.38	.....	4.38	99	Douglass.....	7.01	1.17	8.18
104	Brightwood.....	61.91	29.32	91.23	85	Eastern High.....	205.85	60.70	266.55
151	Brightwood Park.....	12.00	.98	12.98	116	Eckington.....	24.63	13.03	37.66
					135	Edmonds.....	30.53	4.65	35.18

Public schools, District of Columbia, 1909 (repairs to plumbing)—Continued.

No.	Name of school.	Labor.	Material.	Total.	No.	Name of school.	Labor.	Material.	Total.
133	Emery.....	\$101.95	\$88.65	\$190.60	40	Mott.....	\$20.75	\$2.52	\$23.27
32	Force.....	81.25	16.56	97.81	93	Patterson.....	4.19	.....	4.19
11	Fort Slocum.....	5.31	3.85	9.16	98	Payne.....	20.94	2.24	23.18
15	Franklin.....	37.01	9.65	46.66	31	Peabody.....	14.25	1.55	15.80
141	French, B. B.....	9.00	2.14	11.14	131	Petworth.....	20.76	9.03	29.79
143	Gage.....	9.69	.33	10.02	57	Phelps.....	5.72	.52	6.24
26	Gales.....	46.25	28.37	74.62	81	Phillips.....	4.81	1.80	6.61
106	Garfield.....	2.00	10.84	12.84	94	Pierce.....	16.31	1.92	18.23
34	Garnet.....	55.95	17.95	73.90	86	Polk.....	5.50	1.07	6.57
75	Garrison.....	2.62	.27	2.89	17	Potomac.....	4.38	1.38	5.76
63	Giddings.....	19.02	2.06	21.08	28	Randall.....	51.50	22.02	73.52
41	Grant.....	35.39	2.02	37.41	22	Seaton.....	46.86	7.32	54.18
105	Greenleaf.....	23.94	2.76	26.70	134	Simmons.....	11.25	.32	11.57
37	Hamilton.....	67.16	56.88	124.04	80	Slater.....	1.69	.73	2.42
84	Harrison.....	3.44	.47	3.91	64	Smallwood.....	9.07	1.11	10.18
107	Hayes.....	10.38	.96	11.34	56	Smothers.....	3.88	.....	3.88
33	Henry.....	24.64	14.83	39.47	138	Stanton.....	4.25	10.34	14.59
115	Hilton.....	12.13	3.39	15.52	97	Stevens.....	23.20	7.31	30.51
119	Hubbard.....	27.29	6.92	34.21	19	Sumner.....	16.64	2.16	18.80
147	Hyde.....	43.00	9.89	52.89	126	Syphax.....	13.38	9.19	22.57
69	Jackson.....	.....	.40	.40	118	Takoma.....	15.81	12.96	28.77
23	Jefferson.....	133.90	66.89	200.79	88	Taylor.....	4.38	.....	4.38
95	Johnson.....	31.19	9.07	40.26	102	Tenley.....	3.44	.58	4.02
77	Jones.....	43.32	16.10	59.42	29	Thomson.....	6.19	1.08	7.27
149	Ketcham.....	23.00	47.03	70.03	14	Threlkeld.....	205.80	206.08	411.88
108	Langdon.....	84.01	79.91	163.92	114	Toner.....	22.78	8.57	31.35
132	Langston.....	19.69	2.19	21.88	59	Towers.....	15.44	1.39	16.83
67	Lenox.....	29.76	14.06	43.82	45	Twining.....	27.50	2.63	30.13
18	Lincoln.....	58.94	15.23	74.17	83	Tyler.....	27.03	2.09	29.12
124	Lovejoy.....	73.25	13.23	86.48	87	Van Buren.....	25.75	4.22	29.97
142	Ludlow.....	51.19	10.43	61.62	150	Van Ness.....	78.40	25.89	104.29
82	M Street High.....	61.13	15.51	76.64	4	Wallach.....	33.32	12.97	46.29
71	Madison.....	11.00	1.60	12.60	121	Webb.....	21.06	18.27	39.33
62	Magruder.....	4.81	.50	5.31	51	Webster.....	12.63	2.12	14.75
55	Maury.....	29.02	3.22	32.24	54	Weightman.....	36.95	4.62	41.57
16	McCormick.....	18.57	2.94	21.51	117	Western High.....	213.27	88.24	301.51
130	McKinley, Manual Training.....	51.50	35.94	87.44	136	Wheatley.....	47.75	6.73	54.48
8	Military Road.....	8.75	1.94	10.69	89	Wilson.....	6.00	.....	6.00
72	Monroe.....	1.38	.....	1.38	101	Woodburn.....	5.00	1.13	6.13
140	Montgomery.....	65.38	23.19	88.57	49	Wormley.....	20.55	2.50	23.05
125	Morgan.....	17.63	1.52	19.15		1018 Twelfth street nw.....	9.38	.....	9.38
44	Morse.....	4.13	1.11	5.24					

SUMMARY.

Total accounted for.....	\$5,548.15
Miscellaneous time orders.....	30.00
Gas, stationery, etc.....	30.59
Material on hand.....	860.50
Unexpended.....	45.76
Total.....	6,515.00

HENRY STOREY,
Superintendent of Repairs.

The INSPECTOR OF BUILDINGS.

REPORT OF THE PLUMBING INSPECTOR.

WASHINGTON, D. C., August 15, 1909.

SIR: I have the honor to submit the twenty-seventh annual report of the work performed by this office for the fiscal year ending June 30, 1909:

INSPECTIONS.

Preliminary inspections of plumbing, etc.....	10,483
Inspections of remodeling, extension, and repairs to plumbing in old houses.....	8,412
Inspection of plumbing in new buildings.....	8,556
Inspection of gas and gas fitting.....	2,278
Inspection of lead and water service pipes.....	1,025

Inspection of new terra-cotta house sewers.....	72
Inspections of repairs to terra-cotta sewers.....	556
Peppermint tests and final inspections.....	3, 692
Sewer taps into main sewers.....	1, 345
Notices served on owners and plumbers by inspectors.....	328
Examination on complaint.....	2, 657

 39, 404

As will be noted in the table below, there is a decided increase this year in the number of inspections made, over those of the previous fiscal year, the increase being 9,857 inspections. There was also a marked increase in the number of plans examined for new work, which of course assisted in increasing the inspections of plumbing work. The money market appeared stronger also during the past year than in the preceding one, and was the cause of forcing this additional work on the small field force of inspectors. Had it not been for the temporary assistance given by the two additional men during the portion of the year I was able to keep them on owing to the small appropriation, the regular force would not have been able to have carried their work on in as satisfactory a manner as that in which it was executed.

TABLE OF INSPECTIONS OF PRECEDING YEARS.

1894-1895.....	5, 708	1902-1903.....	25, 297
1895-1896.....	8, 677	1903-1904.....	25, 637
1896-1897.....	14, 113	1904-1905.....	27, 337
1897-1898.....	17, 550	1905-1906.....	30, 185
1898-1899.....	17, 600	1906-1907.....	32, 100
1899-1900.....	17, 405	1907-1908.....	29, 547
1900-1901.....	18, 965	1908-1909.....	39, 404
1901-1902.....	22, 621		

I wish again to invite attention to the great necessity of increasing the inspecting force by at least two men—asked for in the estimates. The districts now assigned the regular force are entirely too large, and the number of inspections they make is too great to insure proper inspection.

Leaving out the number of inspections made by the principal assistant, the draftsman, myself, and the two temporary inspectors, there remain a total of 31,490 inspections which were made during the year by the five regular men and one paid from the deposit of the Washington Gaslight Company, which averaged 5,248 $\frac{1}{2}$ inspections per man for the year, and a little over 17 inspections per man per day. During the summer and spring when building operations are at their height this average does not hold, as one of my men has made during one day, in the month of June, 73 inspections (27 being peppermint tests and final inspections). To make this number of inspections they can not be carefully made, nor can the inspector protect himself or the office against passing some skillfully hidden defect, which develops later on. It would really be unjust to blame the inspector under the circumstances, as it is impossible to protect himself, the public, or the office, because of the hurried inspection he is forced to make on each job on account of the large territory he must cover.

It is difficult to be at a job at the time designated by the plumber; especially does this involve a great hardship on the owner who is having plumbing remodeled, for he must pay for the time the plumber is waiting for the inspector, in enforced idleness.

If an appropriation is made for the employment for two additional permanent men, this condition will be materially relieved, because the District of Columbia can then be divided into eight districts in place of six, and will materially lessen the number of inspections each man will make, and give more time to make a close and thorough inspection.

The salary of \$1,000 paid the assistant inspectors is an insignificant sum compared to the services rendered the general public and the District government, and is no incentive for a man to remain in the service when an opportunity presents itself, as it has to four ex-inspectors who resigned during the last three years, to engage in business. Even the journeyman plumber, whose work is passed upon by the assistant inspector, receives a higher wage per day—\$4—than these men, who are out in the rain, snow, sleet, and cold of winter, and the heat of summer, and who are performing their duties in the field and in the office in a thoroughly competent manner, entitling them to the just increase asked for them. Their salary is below that paid men in Philadelphia (\$1,200), St. Louis (\$1,440), Chicago (\$1,404), and a number of other cities (\$1,200), performing like duty in their respective cities.

EXTRA HOURS GIVEN THE DISTRICT BY EMPLOYEES OF THIS OFFICE.

Prior to January, 1909, no record was kept of the extra time given by the employees of this office to the service of the District government.

Early last fall, the work of the office being so heavy, it was found necessary to have the entire office force, including the inspectors, report two evenings a month in order to keep the work as near up to date as possible. There is a great deal of office detail work which is now performed by the assistant inspectors which really does not belong to that position, and if the index clerk which I have repeatedly asked for is allowed, this work can be done by that clerk and the inspectors allowed to devote more time to their particular work of inspecting.

Following is the schedule of the extra time given for the last half year, which does not really cover the busiest period, which is from May to October: Henry B. Davis, 166 hours, or 23½ days; Richard A. O'Brien, 21 hours, or 3 days; Alfred R. McGonegal, 178½ hours, or 27½ days; J. F. Brady, 63 hours, or 9 days; M. J. Fennell, 31 hours, or 4½ days; M. J. O'Callaghan, 38 hours, or 5½ days; Wm. H. Marsh, 103½ hours, or 14½ days; Geo. A. Crawford, 30 hours, or 4½ days; Wm. A. Sparrow, 28½ hours, or 4¼ days; Wm. L. Marsden, 30½ hours, or 4½ days; Edmund F. Petersen, 41 hours, or 5½ days; F. Berton Pidenour, 29 hours, or 4½ days. This makes a total of 760 hours, or 108½ days, extra time given by these employees in conscientious work without protest or extra compensation.

TEMPORARY ASSISTANTS.

If the two additional permanent assistant inspectors of plumbing are not allowed, as provided for in the estimates, I urge that two temporary assistants again be allowed, as has been done for the past two years. These temporary men have been of the greatest assistance to the present regular force during the spring and summer months, filling in when the regular men are on their much earned leave and enabling the inspecting territories to be made slightly smaller.

As an item for consideration in this connection, I submit the figures of the number of inspections made by these temporary men, one (Boyland) for five months and the other (Tapp) for nine months:

	Inspections.
John E. Boyland.....	2,345
Samuel Tapp.....	2,988

INDEX CLERK.

At the present time there is but one clerk assigned this office to look after the general office work—the indexing, writing of letters, orders, indorsements, and other clerical work.

As already mentioned, the work in all branches of this office was materially increased during the past year, and this necessarily has greatly increased the work devolving on this clerk. The item of indorsement on engineer department papers alone requires a great deal of necessary handling in the office in order to keep the record in such shape that the matter wanted may be found immediately. Each case is indexed in four places.

During the past year a system of carbon copy of letters and orders was inaugurated in place of the letter book copying, thus providing for the keeping of the entire record of a case in one place under one jacket and being immediately available for any information which is sought on that particular case. While this system has not relieved the office of any work, but rather increased it, the plan is found very much better and is more systematic in office routine. Each of these carbon copies must be folded, placed in the jacket, and a proper index made of the same on the outside of the jacket.

A number of index systems have been placed in practice here during the year, all of which have greatly facilitated the work of finding matter, and I have heard it expressed that the plumbing office has very little trouble in finding their records.

In order to keep this office detail work up-to-date, it has been necessary to employ a temporary clerk and pay him from the several appropriations under which he works. This clerk has taken charge of receiving the telephone orders which are sent in by the plumbers between 9 and 10.30 each morning and assisting generally in the work of the office, and had it not been for the relief given by the employment of this temporary clerk it would have been impossible to keep the work up from day to day. Even with him in the office, the force as already cited is compelled to work after office hours very often.

I am extremely anxious to provide some means by which the assistant inspectors can be relieved of the great amount of clerical work which they are now forced to do—the writing of their reports, the recording of their inspections on the record sheets of each job and the other details which could be taken up by the proposed index clerk, who would be a stenographer and typewriter. It is my plan, if this clerk is allowed the office, to have him take stenographic notes of the inspectors' reports and relieve the assistants of this end of their clerical work, as well as helping them out on their recording of inspections. This clerk would also assist the present clerk in the general office work and in every way be of material assistance.

I therefore earnestly hope that favorable consideration will be given this item.

COMPLAINTS.

During the past fiscal year there were 2,657 complaints filed in this office against defective and leaky plumbing, etc. These complaints necessitated the inspector giving a great amount of his time in investigating the cause and in writing the report on the same in the office. They also require numerous inspections after the service of notice before the defective plumbing is finally corrected. Water in cellars is a very frequent complaint and causes more inspections than any other. Its cause is most difficult to determine, because it can be brought about by surface seepage and by leaking sewer or water service, not only in the house where the water appears in the cellar but in houses quite remote from the cellar in which the water appears. I have continued the use of aniline yellow powdered dye on supposed defective sewers with very good results. A small amount of this dye colors a large quantity of water a yellowish-green tint, and it is a most positive proof that the sewer of the adjoining property is leaking when the colored water appears in the cellar where the accumulation is complained of.

The accumulation of water in the cellars of houses connected to separate system sewers has been up to this year a serious misfortune to the owners, as such water was not allowed to enter the sewer; but now a means has been allowed by the commissioners to connect the cellars or subsurface drains into such separate system sewers, provided written consent is obtained.

OFFICE WORK.

The following is a table of the details of office work performed during the past fiscal year, which shows a marked increase, as indicated by the comparison of this year with that of last year:

Nature.	Work done in—	
	1909.	1908.
Orders to repair plumbing and gas fitting.....	1,907	1,183
Letters to Engineer Commissioner and other officials.....	1,143	302
Miscellaneous letters and papers.....	2,304	1,561
Indorsements on communications.....	2,761	1,969
Police court cases, fined or nolle prossed.....	35	43
Plans prepared.....	34	36
Specifications prepared.....	36	22
Plans and specifications revised.....	12	8
Examination of plans for new buildings.....	2,860	1,365
Examination of building repair applications.....	2,225	2,497
Two-cent postage stamps used.....	3,238	2,416
One-cent stamps used.....	192	259

Attention is called to the great increase shown in the office work, especially to the item of indorsements on communications, those on the engineer department papers requiring four indexes, which alone consumes a great deal of time, and is another argument in favor of this office being allowed the index clerk so badly needed, and which I trust the commissioners will allow in view of the great necessity existing for such a clerk in this office.

POLICE COURT CASES.

Total warrants obtained.....	35
Violation plumbing regulations.....	23
Unlicensed plumbers.....	7
Disorderly conduct, public-convenience stations.....	5
<hr/>	
Nolle prossed—work performed.....	20
Forfeited collateral.....	10
Fined.....	2
Not apprehended.....	1
Cases pending.....	2
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Fines.....	\$10
Forfeited.....	75
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	85
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Disposition of cases continued from last year:	
Nolle prossed.....	1
Fined.....	1
Forfeited.....	2
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	4

PER DIEM EMPLOYEES.

John Jones, laborer, 1 day, at \$2.....	\$2.00
Wm. Smith, laborer, 3 days 1½ hours, at \$2 per day.....	6.37
Edmund F. Petersen, temporary assistant inspector of plumbing, 8 days, at \$3.25.....	26.00
John Boyland, temporary assistant inspector of plumbing, 128 days, at \$3.25.....	416.00
Samuel Tapp, temporary assistant inspector of plumbing, 230½ days, at \$3.25.....	749.13
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	1,199.50

(The above paid from the appropriation for "Temporary additional assistant inspectors of plumbing and laborers," 1909.)

Wm. T. Levi, inspector of construction, 55 days, at \$4.....	\$220.00
Roscoe C. Flinder, inspector of construction, 113 days, at \$4.....	452.00
F. Burton Ridenour, skilled laborer, 25 days, at \$1.50.....	37.50
F. Burton Ridenour, skilled laborer, 48 days, at \$2.25.....	118.00
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	827.50

(The above paid from the appropriation "Public schools, District of Columbia, 1909, repairs to plumbing.")

F. Burton Ridenour, skilled laborer, 5 days, at \$2.25.....	\$11.25
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(The above item paid from the appropriation for "Drainage of lots.")

In connection with the temporary assistant inspectors of plumbing, I would state they have been of very material assistance in relieving the over-worked regular force of field inspectors, and I urge that the suggestions under that heading in this report and the estimates be favorably considered by the commissioners.

SUBURBAN HOUSE SEWERS.

The appropriations which have been made for trunk sewers in the suburbs have not been large enough to give immediate relief in the crowded sections of the suburbs, which forces the citizens to maintain systems of sewage disposal, such as subsoil drains, septic tanks, etc., where the soil is found suitable, but in many cases the soil will not allow the proper operation of these systems, and the citizens are thereby debarred from having modern plumbing in their premises. The value of property is very much increased by having the sewer and water mains extended, and naturally the revenues of the District are increased by taxation of these properties. The extension of these sewer and water services also lessens the danger of disease and gives the opportunity to the property owners of enjoying the facilities of modern plumbing.

COMPULSORY DRAINAGE.

There were 22 cases of compulsory drainage on hand at the beginning of the fiscal year, a total of 47 cases being received during the year, making a grand total of 69 premises to be connected with sewer and water main, and 6 nuisance cases for violation of regulations, a total of 75.

These were disposed of as follows:

Work done by owners.....	17
Buildings torn down.....	4
Returned to the health office.....	1
With the board for the condemnation of insanitary buildings and corporation counsel.....	13
Action pending.....	11
Received too late for action this year.....	19

There were 10 cases where houses were connected to sewer and water or other work done by this office under contract, at a cost of \$1,248.80, leaving a balance of \$2,751.20.

At least 5 of the 11 cases on which action is pending are so constituted as to make any possibility of the District doing the work extremely doubtful.

I call attention to the large number of cases where the work was performed by the owners of the properties after the papers were taken under consideration by this office. This was directly due to the particular attention paid to this part of the work and was the result of many conferences with the owners and agents by this office.

PLUMBING IN PUBLIC SCHOOL BUILDINGS.

The appropriation of \$50,000 for "Repairs to and changes in plumbing in existing school buildings, 1909," has been expended as follows:

Allotted superintendent of repairs.....	\$6,040.00
Complete remodeling in—	
Carberry.....	\$3,043.00
Logan.....	3,621.00
Taylor.....	3,511.50
Phillips.....	3,632.50
Polk.....	2,857.00
Slater.....	2,863.00
Arthur.....	3,871.00
Patterson.....	2,704.00
Wilson.....	2,666.00
Orr.....	2,826.00
Tenley.....	4,602.95
	<hr/>
	36,197.95
Partial work in—	
Western High.....	381.32
Chevy Chase.....	189.50
Eastern High ^a	2,346.00
Eckington.....	622.00
Blow.....	177.00
Cooke.....	266.50
Threlkheld ^a	445.22
Langdon.....	116.42
Fillmore.....	149.00
Brookland.....	1,851.00
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	6,543.96
Printing, drawing materials, etc.....	205.50
Inspection costs.....	827.50
Balance on hand ^a	185.09
	<hr/>
Total appropriation.....	50,000.00

There were 11 buildings in which the plumbing work was completely remodeled, new seat-action closets, urinals, lavatories, drinking fountains, etc., installed, and lead water services provided to replace the partially obstructed old black-iron services.

^aTwo contracts still running under this appropriation, and these total amounts will probably be altered before completion this fall.

All closets installed this year have been of the seat-action, pressure-tank closet type, which has been made up especially from specifications prepared in this office. This type has been used for some years and is found to be remarkably free from expense for repairs, it costing less to keep this type in repair than the ordinary type of pull-tank closet or automatic seat-acting rod attachment to closet and tank.

The urinal is a slate stall fixture, with continuous overflow flush, and with a partial ventilation. The recent report of the "Schoolhouse commission" states: "In its many inspections the commission saw no urinal fixture that could compare with this one for efficiency." The original designs, as well as plans for many improvements to this fixture, were drawn in this office, and it can be purchased from several different makers at a cost of from \$22 to \$28 per stall (depending on conditions), which is less than a good tank and common lipped urinal can be bought for and set.

Lavatories are of the vitrified porcelain (stone-china) and are better and more durable than the cast-iron enamel kind so much used, and cost no more. The drinking fountains are of the most modern and sanitary type.

CONVEYANCE.

The principal assistant inspector of plumbing uses a bicycle in performing his duties and in apprehending unlicensed plumbers, obtaining information, seeing witnesses, etc. Most of this work is done in the suburbs, where it can be performed with comparative safety to the unlicensed man.

There is a great need that this outlying district be given periodical inspection, which can not well be done now. Such inspection will materially aid in preventing this illicit work being done and the owners being defrauded. To enable a speedy inspection without wearing a man completely out, I recommend that a motorcycle be provided this employee.

BADGES.

I again invite attention to a subject which should be given consideration, and that is that the building office, sewer, water, and surface departments, and this office, all have different style badges. These badges are different shapes, color, and design—some artistic and others not. It would appear policy to have all inspectors who wear badges to have them of the same design, with the possible exception of the fire and police departments. The public would then become familiar with the badge worn by the District inspectors, and they would not be denied admittance to premises, as is often the case now, because of their fear of admitting a bogus inspector.

POLICE AUTHORITY FOR INSPECTORS.

I am of the opinion all of the inspectors of this office should be given special police authority similar to that which was given the principal assistant inspector. It is their duty to enforce the law governing the installation of plumbing, for which there is a penalty for violating the same. The assistants frequently find unlicensed men doing plumbing work without authority, and when discovered by the assistants give fictitious names and addresses, and when this information is given by the assistants to the principal assistant for investigation and warrant often no such person can be found. If police authority was granted these men, to be exercised only in enforcing the plumbing laws, many such offenders would be apprehended and taken to the police station, instead of being practically free from arrest for violating this law, as is the case now.

The assistants frequently have to pay when telephoning the office on important official business. This occurs at times when they are not near a District building, or they are compelled to go out of the way to find such a building, and if they are made special policemen they would have access to the patrol box and could use the District telephone. I am informed that some of the District inspectors have this privilege now, and it would be a great help to the assistants of this office to have that privilege granted them, as I believe they should be given every opportunity to save time.

AMENDMENTS AND NEW REGULATIONS.

During the year a number of amendments have been made to the plumbing and gas fitting regulations which were made necessary by new conditions and for the advancement in plumbing construction and installation. It has been impossible to keep the public informed, except by publication in the newspapers, owing to the insufficient allotment of the contingent fund, from which the printing of these amendments must be paid. At the present time this office is entirely out of copies of the plumbing

regulations, but after the approval of the amendments to the gas-fitting regulations, it is my purpose to recommend a reissue of the plumbing and gas fitting regulations, which will include all amendments to date.

The present arrangement of the various sections of the present regulations have never been satisfactory to me, as there are a number of subjects which are mentioned in two or three sections, scattered throughout the book instead of being under one head. For several years I have been working on a remodeled draft, rearranging and assembling the parts where they belong, necessarily changing section numbers, inserting clauses from out-of-town plumbing regulations, and making corrections and additions from time to time, with a view of eventually having it approved for promulgation. This draft is in typewritten form, and I trust that by the next fiscal year will be ready to have printed and distributed. This work had to be done after office hours, and I have received the valuable assistance and cooperation of my assistants, Richard A. O'Brien, Alfred R. McGonegal, and Frederick Brady, who have given this extra time to the District of Columbia without question or protest.

PUBLIC CONVENIENCE STATIONS.

Two public convenience stations have been in service for two years now and their use by the public is growing steadily.

During the last inaugural week they were crowded night and day, a large part of the time to their capacity.

Such use as they have had ably demonstrates the need of stations in other locations. The station (No. 3) provided for a year ago in Mount Vernon square has not been built, although I am unofficially informed that the plans for the same have been completed.

The money is available for two more stations—No. 4 on Ninth street north of F street, and No. 5 near Dupont circle.

There is urgent need for other stations to properly cover the crowded portions of the city, notably at Fifteenth street and New York avenue, Pennsylvania avenue near Peace Monument, and at Thirty-second street and M street NW.

This need is fully emphasized by the following statement of attendance and receipts: The total attendance at both stations for the year was 2,232,584, an increase over last year of about 15 per cent. This was divided into 1,896,821 males and 335,763 females, and averaged for both stations 6,116 per day, 340 per hour, 5½ per minute during all the time the stations were open. Several days during March the attendance reached 20,000 and once exceeded 25,000.

The money received for fees amounted to \$1,191.44, an increase of about 60 per cent over last year and being practically \$100 per month. As the especial convenience of the pay compartments become better known, I expect the receipts will increase.

At the present time the pay compartment facilities at station No. 1 are not often idle, and it may be necessary in the near future to arrange for an increase in their number.

It is worthy of note that the receipts from the female compartments was only \$88.50, or about 7 per cent of the whole amount.

These receipts are turned into the Treasury as miscellaneous receipts; and inasmuch as each fee received necessitates the expenditure from the maintenance fund of about 50 per cent of it for soap and laundry, it means that the increasing fees represent increasing expenses. It would appear to be perfectly proper to have a clause inserted in the appropriation bill allowing the purchase of towels, the expense of laundering same, and the purchase of soap to be paid for from the receipts, and the balance to be turned into the Treasury. As it is, a portion of the estimate for maintenance is taken up by these expenses, which is not equitable in view of the return in receipts which is directly proportional to such expenses. It is also not possible to accurately forecast the receipts, which mean usage of towels and soap, and a miscalculation might seriously embarrass other branches of the maintenance.

The total cost of operating the two stations amounted to within about \$4 of the appropriation of \$6,700. The operation cost was brought within this amount by cutting down the number of operating hours by two hours daily for the two last months in the fiscal year, to the great annoyance and inconvenience of the citizens.

These stations are operated on a most economical plan, and the amount appropriated should not be less than \$3,500 per station, with an added item of \$500 for incidentals for all stations. It does not appear to be policy to cut supplies and salaries of attendants as well as stop the ventilation machinery, etc., a couple of months a year in order to squeeze within an inadequate amount. It might be well to state that in no city from which I have reports is the maintenance less than \$4,000 per station and that the general average is \$5,000. The pay for these positions is not high, in fact is not sufficient to attract and retain a good steady class of employees, the day man receiving

\$2.10, night man \$1.90, day woman \$1.25, night woman \$1.10. The service might be made much more attractive by adding about 25 cents per day to each, an increase of about \$400 per station per year. The cost of supplies bears a definite relation to the number of patrons and can not be controlled.

The work of supervision of the stations is largely done before and after office hours, inspections being made once a week or oftener at the opening time (6 a. m.) and closing time (midnight), and the reports and clerical items are frequently attended to out of office hours. It would appear that the employee attending to this work should be designated as superintendent in addition to his other duties, and should receive additional compensation for work done in his own time.

In connection with public convenience stations, I respectfully call attention to the fact that during the fiscal year 1908 laundering the towels cost 0.4 cent each, during 1909 the cost was 0.5 cent each, and during the coming fiscal year (1910) the contract price is 0.8 cent each, being a 100 per cent increase in two years, and I have been unofficially informed that there is more chance of it being increased another 25 per cent next year than there is of any reduction.

I would suggest that the whole laundry question, including prices, cleanliness of work, promptness, etc., could be well settled by giving the work to the District work-house or other institution and arranging for proper collection and delivery, or at least arranging so some institution could submit bids in competition with the laundries.

PUBLIC BATHS.

A plea for public baths has been made in my annual report for several years past, and in the estimate of last year submitted to Congress the commissioners inserted an item for a building. It is probable it was cut from the bill due to the confounding of this item with the demands for the Playgrounds Association. While the vicinity of a playground might be selected as a site for a public bath, the fact should be borne in mind that such a building is in no sense a play building. It is primarily established to promote cleanliness among the poorer class of the adult population, as an aid to civic improvement and as a necessity to certain classes of our population. The child should be made as welcome as the adult, however, in such a building.

Washington is the only city of any size in the United States which can not give a municipal bath to its citizens or visitors. Free baths have been furnished for fifteen years all the year round by Chicago to its adult poor, and Boston, Baltimore, Brooklyn, New York, Albany, Syracuse, Cleveland, San Francisco, and a score of smaller cities have followed the lead set by the more progressive cities.

There is not a place in Washington where one can get a shower bath for a reasonable price. Clubs of the exclusive type and the Young Men's Christian Association have baths for members only. There are Turkish baths charging \$1 a bath or 8 for \$5, and at a few barber shops one can secure a tub bath at from 25 to 50 cents each. Three months in the year the bathing beach is open, where you must provide your own bathing suit and towel; but even then the beach is so located that you must take a long and hot walk from the nearest car line to reach it, and it is several miles from the congested part of the city, where a public bath house is most needed.

In the present location and condition, the bathing beach or pool is very unsatisfactory and expensive, except to the adults in the immediate neighborhood and the small boys who are willing to walk almost any distance for a swim—not a wash—and who can shortly be accommodated in the playground pools about to be built.

It is not for the citizen in whose home there is a bath tub, or the member of the exclusive club, whom the public bath is intended to reach, but those people who have no home, or the dweller of the alley. The former would be glad to have a bath but can not afford one at a fancy price and the latter could be taught (in fact, would teach himself) the benefits of frequent bathing if the privilege were only extended to him. It must be remembered, however, that we can not get those persons whom we would try to teach cleanliness to walk great distances for a bath.

An authority on public baths says: "To serve those for whose use they are intended, they must be located in the crowded districts, within easy walking distance. Where public baths have been longest in use, there is not only a marked improvement in the general health, but a resultant increase in mental alertness as well." Doctor Barrick says: "I consider that I have done more to prevent the spread of disease in my work for public baths than in all my work as a physician," and "money spent on public baths, where people can go and get clean, does more toward raising the standard of health and morality than a much greater amount spent in any other way." Another authority says: "You can't be healthy or even good unless you're clean," and the Boston bath commission states, in speaking of a marked improvement in the number

of arrests of young persons, "the work of the bath department has been the greatest single agency in effecting this vital improvement in public morals."

It is a known fact that some people are exceedingly careless regarding bathing or keeping themselves clean; this may be due to lack of bathing facilities or gross carelessness. If these persons could secure a public bath within easy walking distance, as well as a shower bath with plenty of good hot water and soap without cost to themselves, the invigoration, freedom of expense, and the proximity of the building would teach them bathing as a habit.

The benefits of a public bath house would certainly be felt in the improvement of the slum and alley conditions of the city, and I earnestly recommend that these items in my estimates be again submitted and that an effort will be made to have them retained and suitable appropriation made.

BATHS IN SCHOOLS.

I again invite attention to a real need for swimming instruction in the schools. An application was made during the construction of the Business High School addition for the including of a pool, but the item was not allowed. There should be one large bath in a white school and one in a colored school, which would be sufficient accommodation for the teaching of the art of swimming, hold breaking, and conservation of strength in water to every pupil in the fifth or sixth year in the schools, thus making every graduate of that grade (and of the Washington schools) in a few years proof against inclusion in the annual harvest of sad drowning accidents. The ability to swim properly and to break the holds of nonswimmers should be made a subject for examination as much as any other of the various studies. A half hour a week for one-half a school year is more than sufficient time to teach swimming thoroughly.

During the year 1908 there were 46 cases of accidental drowning in the District of Columbia, 24 of the unfortunates being young persons. While from the data at hand it is not possible to determine the various circumstances under which death occurred, it is fair to presume that a majority of these young persons either suddenly got just beyond their depth while bathing on a supposedly level bottom, overturned canoe or boat, or were accidentally crowded into the water, and it might also be fair to presume that many of them were either attending the Washington schools or had recently graduated.

Cases are almost common in which the victim drowns within a very few feet of safety and continued life, but the lack of the most elementary knowledge of swimming is their lot.

A recent case comes to mind in which two young men were in a launch on the Potomac, which overturned. One could swim just a little, but he made the 300 feet to the shore, and his companion drowned for the lack of what might have been taught him in two or three short lessons. If his companion who saved himself had been even a fairly good swimmer he might have also been saved.

Within recent years there have been several launches overturned in the Potomac, as well as rowboats and canoes, and each case has added one or more names to the roll of unnecessary accidental drownings.

The cost of the construction of a large pool with heating facilities would be about \$5,000, if placed in or near a large school with steam-power boilers. The cost of maintaining two pools (1 for white and 1 for colored) would probably not exceed \$4,000 per year.

I earnestly believe that if swimming had been compulsory in the Washington schools for ten years back that the number of victims in 1908 would have been reduced by half. Were those 12 lives worth \$4,000?

Would (I refer to a recent case) Mr. Lacey have hesitated at \$4,000 for a ransom for his son who was lost while his brother saved himself?

BATHING BEACH.

As an interested citizen and ex-member of the bathing beach committee I desire to submit some suggestions for the improvements of the present beach, which I trust will meet with the favorable consideration of the Commissioners and Colonel Cosby, officer in charge of public buildings and grounds, and Congress, so that a suitable appropriation will be made.

With the water front such as this city has it seems a shame that it is not provided with a grand bathing beach, in place of the present unsatisfactory place used for a swimming pool. The conditions there are such as to make many adults hesitate before going into the water, yet the boy does not consider the muddy condition of the pool.

What we need is a first-class beach, provided with permanently constructed buildings, designed and finished artistically with approaches, hedges, and flower beds, artistically arranged. Such a location could be obtained on the west bank of the tidal basin and would not interfere in any way, in my judgment, with the improvements that have been made by the Government in this park. The scheme would require that certain filling in with gravel and sand would have to be done 200 to 300 feet from the shore, besides forming steps or incline to the water, possibly 100 feet wide, establishing danger lines, floats, etc. If flood gates could be erected at the entrance to this basin at the Georgetown channel, the muddy water could be kept out and prevent the rise and fall of the tide during the winter when ice forms, and by this means an ideal summer bathing beach could be formed for the male and female swimmers, and a safe skating basin for winter use for those who enjoy this fascinating sport.

In conclusion, I wish to state that this will probably be my last report as inspector of plumbing of the District of Columbia, as I have decided to accept a flattering offer from a firm of builders to become a member and stockholder of the company.

I regret in many ways leaving the service of the District, as I have made many friends in and out of the office, and the work and responsibility while trying at times has been interesting and varied, for I have been in the service since 1895 as a draftsman, superintendent of construction, principal assistant inspector of buildings, and inspector of plumbing.

The successful administration of the office during my term as inspector of plumbing, keeping it free from charges of graft and undue criticism, is mainly due to the conscientious and competent employees of the office who have so ably assisted me to properly conduct this important branch of the municipal government. Too much praise can not be given these assistants, and my only regret is that all my efforts to obtain for them a salary in keeping with their valuable services to the Commissioners and the public have failed, although each year, for a number of years, I have asked for an increase in their salaries. I have again in the estimates herewith recommended that these increases be made, and I most respectfully urge that an effort be made to incorporate these increases, so well deserved, in the Commissioners' estimates and to have them retained in the completed bill.

To the Commissioners, who have so well supported my official decisions, and to the heads of other offices and divisions, who have so ably cooperated with me in my work, I extend my sincere thanks.

Very respectfully,

HENRY B. DAVIS,
Inspector of Plumbing.

Capt. WM. KELLY,
Corps of Engineers, U. S. Army,
Assistant to the Engineer Commissioner, District of Columbia.

REPORT OF THE PLUMBING BOARD.

WASHINGTON, D. C., August 13, 1909.

SIR: I have the honor to submit the following report of the work of the plumbing board for the fiscal year ended June 30, 1909.

There were held during the year 23 meetings for the examination of candidates for licensing as master plumbers and gas fitters. The total number of examinations held during the year is 59. The number of original candidates examined for licensing as master plumbers and gas fitters is 28, of whom 4 passed and 24 failed. Of those who had been previously examined for licensing as master plumbers and gas fitters 13 passed and 15 failed. Three candidates were examined for licensing as master gas fitters, resulting in the success of 1 and the failure of 2.

There was no change in the personnel of the board or its officers.

Very respectfully,

PETER C. SCHAEFER, *President.*
RICHARD A. O'BRIEN, *Secretary.*

Capt. WILLIAM KELLY,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, District of Columbia.

REPORT OF THE PERMIT CLERK, ENGINEER DEPARTMENT.

WASHINGTON, July 28, 1909.

SIR: I have the honor to submit the annual report of the work performed by the permit clerk's office, giving the character and number of permits issued during the fiscal year ending June 30, 1909.

TABLE No. 1.—Permits issued for which fees were paid.

	1908.						1909.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	
Water connections...	194	208	141	180	203	228	114	145	231	193	176	236	2,249
Repairs.....	152	159	149	153	151	124	106	112	101	87	122	118	1,534
Sewer connections...	237	183	179	194	220	203	143	139	184	256	205	271	2,414
Repairs.....	76	85	77	109	93	93	66	92	98	95	79	108	1,071
Gas connections...	226	259	184	245	188	187	156	169	205	329	345	234	2,727
Repairs.....	11	11	11	31	13	30	41	16	31	22	23	15	255
Carriage blocks and hitching posts.....					2		1			1	1	1	6
Conduits.....	32	34	45	39	35	27	15	31	53	47	40	47	445
Gas mains.....	9	18	7	15	16	14	6	8	12	18	9	16	148
Guard stones.....						1			1	2		2	6
Manholes, connect with sewer, en- large, etc.....	8	38	23	55	25	15	27	29	26	49	39	43	377
Parking fences.....	18	14	31	43	29	22	6	13	42	64	69	44	395
Poles.....	30	33	40	19	33	27	26	39	69	50	36	35	437
Total.....	993	1,042	887	1,083	1,008	971	707	793	1,053	1,213	1,144	1,170	12,064

TABLE No. 2.—Special permits issued without fee.

	1908.						1909.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	
Water, sewer, and gas. Blasting.....	110	89	81	124	116	100	83	77	94	104	92	125	1,195
Bridges across gutter. Cables, aerial and overhead connections.....	1	2	2	3	2	1	1	3	4	2	2	2	26
Conduits P. E. P.....	1	1	1	2	1	1		1	2		2	2	14
Copings.....	11	24	9	16	26	23	10	17	25	24	12	18	215
Drain under sidewalk. Driveways.....	27	28	7	4	7	2	6	8	4	10	4	6	113
Engines, move.....	60	39	57	53	64	24	10	15	45	65	85	45	562
Leads, lay and repair..				1		1	1		1	1		1	6
Parking, grade.....	5	5	8	4	8	2	8	3	4	8	9	5	69
Parking, pave.....		1	3	5	7	2	1	4	2	3	2	7	37
Parking railings, re- new.....	171	154	128	164	141	48	50	52	134	143	130	146	1,461
Renewals.....	31	50	40	33	22	59	146	85	70	85	115	173	909
Roadways and alleys, close.....	14	9	2	37	9	2	4	8	5	5	7	6	108
Roadways and alleys, grade and repair..	41	28	28	23	37	15	7	17	50	62	53	46	407
Sidewalk, grade and repair.....	53	30	21	52	51	31	82	25	52	66	60	116	639
Sidewalk, haul across. Sidewalk, lay.....	5	3	5		1	1	1		1	3	3	2	25
Sidewalks, roadways, and parkings, occupy.....	3	3	1	7	6	1	2	5	7	9	2	2	48
Steps on parking.....	3	8	3	6	2	2	4	4	11	8	6	2	59
Stopcock boxes.....	3	2	6	6	3	4	9	4	3	12	4	8	64
Trees.....	25	3	4	16	21	14	7	15	8	15	40	57	225
United States Govern- ment.....		5	2	1	1	1	1	1	5	4	4	1	26
Walls, retaining.....	111	88	73	48	84	48	39	36	87	99	81	112	906
Water tables.....	8			10			10						38
Wires, string.....	3	8		5	10	1		1		2			30
Steam and electric railway companies..			1	2		1		2	1	2	2	3	14
Miscellaneous.....	3	5	2	3	2	8	4	2	9	12	12	6	68
	7	7	16	15	13	1	5	4	9	11	15	11	114
	51	7	5	62	14	21	57	10	8	62	14	8	319
	5	11	4	4	11	6	7	4	1	2	5	3	63
	3	3	2	9	5	15	4	7	5	10	5	3	71
Total.....	755	613	511	715	644	435	558	411	647	839	766	917	7,831

During the year just passed there was an increase of 2,672 in number of fee permits, with a corresponding increase of \$2,672 in the amount of money paid for permit fees, and an increase of 1,349 in the number of permits issued without fee, making an increase of 4,021 in the number of permits issued during the year.

Permits issued during the fiscal years:

1907-8.....	15,874
1908-9.....	19,895

The following table shows the number of permits issued during the past ten years and the amount paid for permit fees to the collector of taxes, District of Columbia, during that time:

Fiscal year.	Permits issued.	Fees paid.
1899-1900.....	10,589	\$6,797
1900-1901.....	10,552	6,583
1901-2.....	11,496	7,388
1902-3.....	12,559	7,930
1903-4.....	12,565	8,103
1904-5.....	13,908	9,518
1905-6.....	16,019	10,496
1906-7.....	15,820	10,134
1907-8.....	15,874	9,392
1908-9.....	19,895	12,064

Two thousand and three communications, an increase over the previous year of 668, were referred to this office, briefs made on cards, permits issued when necessary and reports made, papers indorsed and returned to the respective divisions having supervision over the inspection of the work for which permits were issued.

A daily report of all permits for excavations in the public space was forwarded to the engineer of highways.

Thirteen thousand seven hundred and sixty-six index cards were made out, sorted according to streets, and filed.

I take great pleasure in officially acknowledging the faithful, efficient, and valuable services rendered by the assistant permit clerk and the index clerk. During the year they have worked earnestly, and under trying conditions, on account of the variety of permits issued, continuous attention to one thing being impracticable. Notwithstanding the increase of the work the records have been kept up to date, and I wish to extend my thanks for the cordial manner in which they have assisted in all the duties assigned me.

Very respectfully,

H. M. WOODWARD,
Permit Clerk, District of Columbia.

Capt. WM. KELLY,
Corps of Engineers, U. S. Army,
Assistant to Engineer Commissioner, District of Columbia.

RECORD DIVISION.

[Directly under the supervision of the engineer commissioner.]

CHIEF CLERK OF THE ENGINEER DEPARTMENT.....	DANIEL E. GARGES.
WHARF COMMITTEE.....	J. R. SUTTON, <i>Harbor Master.</i>
	W. J. DOUGLAS, <i>Engineer of Bridges.</i>
	D. E. GARGES, <i>Chief Clerk, Engineer Department.</i>
BOARD FOR CONDEMNATION OF INSANITARY BUILDINGS	Capt. WILLIAM KELLY, <i>Assistant to Engineer Commissioner.</i>
	WILLIAM C. WOODWARD, <i>Health Officer, District of Columbia.</i>
	SNOWDEN ASHFORD, <i>Inspector of Buildings.</i>
ASSISTANT ENGINEER IN CHARGE OF ROCK CREEK PARK.....	L. R. GRABILL.
SUPERINTENDENTS OF DISTRICT BUILDING.....	Capt. WILLIAM KELLY, Capt. E. M. MARKHAM, <i>Assistants to Engineer Commissioner.</i>

REPORT OF THE CHIEF CLERK OF THE ENGINEER DEPARTMENT.

WASHINGTON, August 31, 1909.

SIR: I have the honor to submit the following report of the operations of this office for the fiscal year which ended June 30, 1909:

The work done includes the briefing, recording, and indexing of all communications concerning matters under the jurisdiction of the engineer commissioner, District of Columbia, and all indorsements, references, and correspondence in relation thereto; the preparation and supervision over the execution of all contracts with the District of Columbia, and certification as to the sufficiency on all bonds of contractors, municipal officers, and all other bonds to the United States and District of Columbia relating to District matters; also the distribution of all specifications for construction work of the engineer department. The communications briefed during the year amounted to 15,080, and letters were sent in relation thereto amounting to 4,500. In carrying this work on the card-record system is used, and this has been extended to every branch of the work.

In pursuance of a recommendation made in my last annual report, the commissioners, by order of January 12, 1909, appointed a contract board, to consist of the chief clerk of the engineer department, as chairman, and three employees of his office, to be designated by him, as members. In accordance with this order I designated as members of the contract board Messrs. E. E. Helm, W. N. Handiboe, and R. M. Barr, of this office. The method of handling these contracts is as follows: Upon the acceptance by the commissioners of a proposal to do work, furnish material, apparatus, supplies, etc., this office drafts the contract and submits it to the District official whose duty it is to see to the execution of the contract for his approval; the contract is then sent to the contractor for signature and to furnish the necessary surety or sureties on the bond which is attached thereto. The papers are then forwarded to the corporation counsel with a recommendation for approval, and when approved by him are signed by the commissioners. These contracts are made in quadruplicate, one copy of which is retained in the files of this office, one sent to the auditor for the District of Columbia, one to the Auditor for the State and other Departments, who handles District accounts, and one to the contractor. Much time is saved by this method over that referred to in my last annual report. During the year 245 such contracts were prepared. A table is appended showing the name of the contractor and the nature of the contracts. For convenience of reference the table has been divided into six classes, as follows: (1) Highway improvements; (2) sewer construction; (3) construction material, hauling, etc.; (4) building and building supplies; (5) general supplies; (6) miscellaneous.

This office formerly had charge of keeping an account with all the appropriations expended under the jurisdiction of the engineer commissioner, but by order of the commissioners of December 23, 1908, this work was transferred to the auditor of the District of Columbia, and two of the clerks of this office who were engaged on the work, one at a salary of \$1,600, and one at a salary of \$1,350 per annum, were transferred to the jurisdiction of the auditor of the District of Columbia.

A card record is kept of all assessment work ordered by the commissioners, and on return of the paper after the execution of the work is checked against the order to insure that assessments are made for all work ordered under the assessment system.

Very respectfully,

DANIEL E. GARGES,
Chief Clerk, Engineer Department.

Maj. WILLIAM V. JUDSON,
Corps of Engineers, U. S. Army,
Engineer Commissioner, District of Columbia.

Statement of expenditures from general appropriations for forage, horses, wagons, carts, etc.

[In accordance with act of Congress approved May 26, 1908.]

Cleaning and repairing sewers and basins.....	\$4,800.18
Main and pipe sewers.....	364.75
Suburban sewers.....	330.00
Brookland sewer.....	165.00
Unused balances.....	165.00
Grade crossings.....	419.00
Northwest schedule.....	28.00
New Jersey avenue SE., between B and C streets.....	8.74
B street SE., between New Jersey avenue and South Capitol street.....	2.00
First street SE., between B and C streets.....	16.00
Delaware avenue NE., between B and C streets.....	18.00
C street NE., between Delaware avenue and First street.....	12.00
V street NW., between Fifteenth street and New Hampshire avenue.....	6.00
South Carolina avenue SE., between Thirteenth and Fifteenth streets.....	18.00
Assessment and permit work.....	341.41
North Capitol street, between T and V streets.....	17.58
Grade Mills avenue, Franklin street to Rhode Island avenue.....	9.00
Grade Seventh street, Girard street to Central avenue.....	2.00
Grade and improve Albemarle street, east of Connecticut avenue.....	15.00
Widen Minnesota avenue from Pennsylvania avenue north.....	5.00
Pave Massachusetts avenue between S and T streets.....	16.00
Grade Barnaby road, Livingston road to District line.....	2.00
Grade and improve Webster street from Fourteenth to Sixteenth street...	6.00
Grade and macadamize Monroe street, Michigan avenue to Tenth street ..	15.00
Grade and improve Reno road.....	5.00
Grade and improve Longfellow street, Fifth street to Shepherd road.....	2.00
Grade and improve Sixteenth street extended.....	31.58
Pave Randolph place, North Capitol street to Lincoln road.....	2.00
Pave Girard street, Eleventh to Thirteenth street.....	14.00
Grade and improve Holmead place, Park road to Otis place.....	6.00
Grade and improve Fifth street, U to W street.....	3.00
Grade and improve Forty-first street and Western avenue.....	12.00
Grade and improve Second street, south of Bryant street.....	11.00
Pave S street, North Capitol street to Lincoln road.....	6.00
Manor street, Warder street to Park place, grade and improve.....	8.00
Grade and improve Rittenhouse street to Western avenue.....	13.58
Grade and improve street in Anacostia.....	6.00
Grade and improve Ingraham street, Brightwood avenue to Ninth street..	3.00
Grade and improve Ontario place.....	5.00
Grade and improve Ingleside terrace.....	6.00
Grade Kearney street, Twelfth to Thirteenth street.....	3.00
Grade and macadamize Emerson street, Brightwood avenue to Fourteenth street.....	7.00
Repairs to streets, alleys, and roads.....	346.14
Sidewalks and curbs.....	7.00
Construction and repair of bridges.....	60.00
Parking commission.....	2,678.59
Repairs to schools.....	388.40
Repairs to police stations.....	19.31
Repairs to fire-engine houses.....	32.19
General expense, water department.....	1,731.82
High service, water department.....	9,181.71
Total.....	21,370.98

SCHEDULE OF PROPOSALS RECEIVED DURING FISCAL YEAR 1908-9.

PROPOSALS FOR CONSTRUCTION OF MUNICIPAL BUILDINGS.

Proposals for constructing administration building, workhouse for males, and combination boiler and kitchen building, including heating and ventilating, location on reservation No. 13, Washington, D. C.

[Opened August 15, 1908.]

Thompson-Starrett Company.....	\$119,400
Geo. A. Fuller Company.....	118,000
Pavarini & Wyne.....	111,000

Proposals for constructing a twelve-room school building, No. 158, located on Hamilton road, square 5726, Garfield, District of Columbia.

[Opened January 2, 1909.]

Bidder.	Price complete.	Alternate bid—					
		A.	B.	C.	D.	E.	F
Thompson-Starrett Co.....	\$85,500	\$1,600	\$1,000	\$300	\$500	\$300	\$1,200
Pavarini & Wyne.....	93,000	2,000	700	300	400	300	.....
Burgess & Parsons.....	87,200	2,600	920	345	400	.....	.....
Wm. E. Mooney.....	103,794	4,000	2,200	700	600	299	.....

Proposals for constructing an addition to the Business High School building, located on R street, between Eighth and Ninth streets NW, Washington, D. C.

[Opened January 25, 1909.]

Bidder.	Price complete.	Alternate bid—				
		A.	B.	C.	D.	E.
W. E. Mooney.....	\$87,637	\$830	\$100	\$50	\$250	\$2,000
Pavarini & Wyne.....	69,300	830	230	.....	250	1,250
Robert T. Humphrey.....	72,800	830	270	600	250	1,150
Burgess & Parsons.....	74,220	850	225	400	250	1,125
Thompson-Starrett Co.....	71,895	800	150	200	150	1,400

Proposals for constructing an eight-room school building, No. 157, on School street, lots Nos. 3, 4, and 5, block No. 4, Mount Pleasant, D. C., to relieve the Johnson School.

[Opened April 3, 1909.]

Bidder.	Price complete in time specified (8 months).	Price complete.		Alternate bid—				
		Amount.	Time.	A.	B.	C.	D.	E.
Newman & Smith.....	\$63,103	\$65,000	Months. 6	-\$500	-\$1,500	-\$1,500	-\$800	-\$500
Robt. T. Humphrey.....	63,600	.....	.....	- 600	- 2,700	- 2,250	-1,300	-1,100
James M. Dunn (not signed).....	58,849	.....	7	- 415	- 1,160	- 1,790	-1,750	-1,650
Burgess & Parsons.....	60,000	.....	.....	+ 400	+ 1,300	- 2,000	-1,200	- 620
W. E. Mooney.....	66,670	68,500	7	- 281	- 400	- 500	-1,400	-1,073
Thompson-Starrett Co.....	63,000	63,000	7	- 350	- 3,000	- 400	- 680	- 450

Proposals for constructing an eight-room school building, No. 157, on School street, lots Nos. 3, 4, and 5, block. No. 4, Mount Pleasant, D. C., to relieve the Johnson School—Continued.

Bidder.	Alternate bid—						
	F.	G.	H.	I.	I.		J.
					1.	2.	
Newman & Smith.....	— \$42	—\$48	—\$50	—\$200	+ \$500	+ \$300	—\$400
Robt. T. Humphrey.....	—1.100	—200	—100	.....	.....	.....	— 475
James M. Dunn (not signed).....	.....	.....	.....	— 100	.....	.....	— 309
Burgess & Parsons.....	+ 160	— 20	.....	— 250	.....	.....	— 425
W. E. Mooney.....	— 25	—155	— 50	— 600	+1.075	+ 475	— 280
Thompson-Starrett Co.....	.....	— 45	— 25	.....	.....	.....	— 230

Proposals for an 8-room school building, No. 157.

[Opened April 19, 1909.]

Bidder.	1.	2.	C.	D.	I.	I.		J.	Time for com- pletion.
						A.	B.		
									Months.
Joseph H. Gibbons.....	\$58,700	\$59,300	\$3,200	\$300	.....	\$950	\$1,060	\$200	.....
Robt. T. Humphrey.....	58,200	.....	2,400	1,000	\$100	900	800	475	.....
Thompson-Starrett Co.....	61,950	61,950	1,600	500	175	.....	.....	400	7
Newman & Smith.....	60,500	62,000	2,300	800	200	.....	.....	400	6
J. M. Dunn.....	55,600	56,600	.....	900	250	1,020	560	300	7
Burgess & Parsons.....	57,979	.....	3,350	850	200	.....	.....	350	8

Schedule of proposals for constructing a substation and stable building for the Police Department, to be located at the southwest corner of Nichols avenue and Chicago street, Anacostia, D. C.

[Opened June 21, 1909.]

Bidder.	Price complete.	Alternate bid—							
		A.	B.	C.	D.	E.	F.	G.	H.
J. M. Dunn.....	\$16,365	.....	—\$90	—\$185	—\$25	.....	.....	—\$179	—\$350
Allen T. Howison.....	17,580	—\$100	—136	— 345	.....	—\$50	—\$207	— 180	— 355
Joseph H. Gibbons.....	18,269	— 97	—100	— 300	— 45	—200	— 100	— 170	— 351
Burgess & Parsons.....	16,779	— 60	— 50	— 300	— 20	—100	— 200	— 175	— 350

Bidder.	Alternate bid—								
	I.	J.	K.	L.	M.	N.	O.	P.	Q.
J. M. Dunn.....	.....	.....	—\$30	.....	—\$65	—\$250	— \$5	.....	—\$80
Allen T. Howison.....	—\$65	—\$284	— 50	—\$417	— 60	— 270	— 14	—\$34	— 62
Joseph H. Gibbons.....	— 35	— 160	— 60	— 375	—100	— 200	—100	— 25	— 40
Burgess & Parsons.....	— 20	— 260	—200	— 150	—125	— 265	— 25	—100	— 75

PROPOSALS FOR REPAIRS AND CHANGES IN SCHOOL BUILDINGS.

Proposals for repairs to and changes in plumbing in Tenley school building, No. 102.

[Opened September 14, 1908.]

Hutchinson & McCarthy.....	\$4,573
S. S. Shedd & Bro.....	4,647

Schedule of proposals for drinking fountains, Fillmore School.

[Opened October 8, 1908.]

Darnall & Jones.....	\$154
Louis Conradis.....	149
S. S. Shedd & Bro.....	175
Edw. J. Hannan.....	154
Wm. Rothwell & Son.....	155

Schedule of proposals for repairs to and changes in plumbing in Brookland School.

[Opened October 10, 1908.]

Hutchinson & McCarthy.....	\$2,127
S. S. Shedd & Bro.....	1,927
Wm. Rothwell & Son.....	1,875
Darnall & Jones.....	1,794

Proposals for plumbing in Eckington School.

[Opened November 18, 1908.]

Jas. Nolan & Sons.....	\$666
S. S. Shedd & Bro.....	599
Wm. Rothwell & Son.....	696
Hutchinson & McCarthy.....	671

Proposals for cement walks at the Gage School.

[Opened November 25, 1908.]

The Cranford Paving Company:	
Grading.....	\$95
Concrete work.....	495
Screenings.....	280
Fence removal.....	70
Fence and gates.....	365
Total.....	1,305

R. J. Beall Construction Company:	
Grading.....	45
Concrete work.....	399
Screenings.....	190
Fence removal.....	15
Fence and gates.....	90
Total.....	739

Proposals for constructing two exterior cast-iron stairways at the Henry D. Cooke School Building, Seventeenth street, near Columbia road.

[Opened January 2, 1909.]

Frank C. Potts.....	\$1,328.00
A. F. Jorss.....	1,141.60
Fred J. White.....	845.00
Fred S. Gichner.....	1,293.00
Jos. H. Gibbons.....	1,197.00

Proposals for complete electrical installation at the Henry D. Cooke School Building

[Opened January 4, 1909.]

Capital Electric Company.....	\$425
Gluckhuhn & Bro.....	475

Proposals for plumbing at Chevy Chase School, Chevy Chase, D. C.

[Opened January 4, 1909.]

Samuel Artz.....	\$284.00
Robert A. Gibb.....	189.50
S. S. Shedd & Bro.....	211.50
Louis Conradis.....	205.00
E. F. Brooks & Co.....	250.40
Michael J. O'Brien & Co.....	383.60
Ewing & Messier.....	300.00

Proposals for additional plumbing in the Henry D. Cooke School, No. 154, Seventeenth street, corner of Fuller street NW., Washington, D. C.

[Opened January 30, 1909.]

Darnall & Jones.....	\$318.00
S. S. Shedd & Bro. Co.....	297.25
Robt. A. Gibb.....	266.50

Proposals to furnish and erect two exterior cast-iron stairways to be placed on the Bryan School Building, located on B street, between Thirteenth and Fourteenth streets SE.

[Opened March 27, 1909.]

A. F. Jorss.....	\$498
Charles White & Co.....	940
Arundel Iron Works.....	950
The Alexandria Iron Works.....	480
Fred J. White.....	589
C. A. Schneider's Sons.....	471

Proposals for the construction of fireproof stairways, walls, floors, vestibules, and platforms.

BANNEKER SCHOOL BUILDING, NO. 39.

[Opened May 18, 1909.]

Bidder.	Class A.— Fireproof stairways.	Class B.— Fireproof central halls, vesti- bules, and platforms.	Class C.— Fireproof- ing over fresh-air and furnace chambers.	Price complete, including all classifi- cations.
A. F. Jorss.....	\$1,142.00	\$1,286.74	\$1,227.56	\$3,656.50
C. A. Schneider Sons.....	1,526.00	1,443.00	1,781.00	4,750.00
Alexandria Iron Works.....	1,154.00	900.00	1,083.00	3,060.00

AMIDON SCHOOL BUILDING, NO. 42.

A. F. Jorss.....	\$1,141.80	\$1,286.84	\$1,228.16	\$3,656.80
Chas. White & Co.....	1,588.00			
C. A. Schneider Sons.....	1,526.00	1,443.00	1,781.00	4,750.00
Alexandria Iron Works.....	1,154.00	937.00	1,083.00	3,095.00

WORMLEY SCHOOL BUILDING, NO. 49.

A. F. Jorss.....	\$1,142.20	\$1,289.74	\$1,228.16	\$3,660.10
C. A. Schneider Sons.....	1,526.00	1,443.00	1,781.00	4,750.00
Alexandria Iron Works.....	1,154.00	936.00	1,083.00	3,096.00

BLAIR SCHOOL BUILDING, NO. 50.

A. F. Jorss.....	\$1,614.33	\$1,374.74	\$1,227.56	\$4,216.63
C. A. Schneider Sons.....	2,411.00	1,615.00	1,726.00	5,752.00
Alexandria Iron Works.....	1,625.00	946.00	1,083.00	3,564.00

PHELPS SCHOOL BUILDING, NO. 57.

A. F. Jorss.....	\$1,146.20	\$1,283.17	\$1,019.83	\$3,449.20
Chas. White & Co.....	2,045.00			
C. A. Schneider Sons.....	1,526.00	1,460.00	1,767.00	4,753.00
Alexandria Iron Works.....	1,154.00	917.00	1,046.00	3,040.00

CARBERRY SCHOOL BUILDING, NO. 58.

A. F. Jorss.....	\$1,176.20	\$1,283.17	\$1,014.91	\$3,476.28
Chas. White & Co.....	1,588.00			
C. A. Schneider Sons.....	1,526.00	1,460.00	1,767.00	4,753.00
Alexandria Iron Works.....	1,154.00	1,058.00	1,046.00	3,180.00

Proposals for the construction of fireproof stairways, walls, floors, vestibules, and platforms—Continued.

TOWERS PUBLIC SCHOOL, NO. 59.

Bidder.	Class A.— Fireproof stairways.	Class B.— Fireproof central halls, vesti- bules, and platforms.	Class C.— Fireproof- ing over fresh-air and furnace chambers.	Price complete, including all classifi- cations.
A. F. Jorss.....	\$1,146.26	\$1,368.95	\$642.06	\$3,157.21
C. A. Schneider Sons.....	1,526.00	1,437.00	1,467.00	4,430.00
Alexandria Iron Works.....	1,154.00	1,033.00	423.00	2,545.00

BLAKE PUBLIC SCHOOL, NO. 61.

A. F. Jorss.....	\$1,614.33	\$1,369.37	\$1,017.91	\$4,001.61
Chas. White & Co.....	3,000.00			
C. A. Schneider Sons.....	2,411.00	1,577.00	1,822.00	5,810.00
Alexandria Iron Works.....	1,625.00	1,150.00	1,046.00	3,731.00

MAGRUDER PUBLIC SCHOOL, NO. 62.

A. F. Jorss.....	\$1,149.20	\$1,415.60	\$642.04	\$3,206.84
C. A. Schneider Sons.....	1,526.00	1,466.00	1,471.00	4,463.00
Alexandria Iron Works.....	1,154.00	1,176.00	423.00	2,680.00

GIDDINGS PUBLIC SCHOOL, NO. 63.

A. F. Jorss.....	\$1,142.20	\$1,283.17	\$1,017.91	.....
Chas. White & Co.....	2,045.00			
C. A. Schneider Sons.....	1,526.00	1,460.00	1,767.00	\$4,753.00
Alexandria Iron Works.....	1,154.00	915.00	1,046.00	3,038.00

JACKSON PUBLIC SCHOOL, NO. 69.

A. F. Jorss.....	\$1,614.33	\$1,371.17	\$1,017.91	\$4,003.41
C. A. Schneider Sons.....	2,411.00	1,577.00	1,822.00	5,810.00
Alexandria Iron Works.....	1,625.00	936.00	1,046.00	3,517.00

MADISON PUBLIC SCHOOL, NO. 71.

A. F. Jorss.....	\$1,146.26	\$1,283.17	\$1,017.61	\$3,446.98
Chas. White & Co.....	1,945.00			
C. A. Schneider Sons.....	1,526.00	1,460.00	1,767.00	4,753.00
Alexandria Iron Works.....	1,154.00	920.00	1,046.00	3,043.00

MONROE SCHOOL BUILDING, NO. 72.

A. F. Jorss.....	\$1,613.28	\$1,370.17	\$1,017.91	\$4,001.36
Chas. White & Co.....	2,200.00			
C. A. Schneider Sons.....	2,411.00	1,577.00	1,822.00	5,810.00
Alexandria Iron Works.....	1,625.00	978.00	1,046.00	3,560.00

GARRISON SCHOOL BUILDING, NO. 76.

A. F. Jorss.....	\$1,146.26	\$1,283.17	\$1,017.91	\$3,447.28
Chas. White & Co.....	2,045.00			
C. A. Schneider Sons.....	1,526.00	1,460.00	1,767.00	4,753.00
Alexandria Iron Works.....	1,154.00	916.00	1,046.00	3,025.00

Proposals for the construction of fireproof stairways, walls, floors, vestibules, and platforms—Continued.

AMBUSH SCHOOL BUILDING, NO. 79.

Bidder.	Class A.— Fireproof stairways.	Class B.— Fireproof central halls, vesti- bules, and platforms.	Class C.— Fireproof- ing over fresh-air and furnace chambers.	Price complete, including all classifi- cations.
A. F. Jorss.....	\$1,146.20	\$1,282.17	\$1,017.91	\$3,446.28
Chas. White & Co.....	1,588.00			
C. A. Schneider Sons.....	1,526.00	1,460.00	1,767.00	4,753.00
Alexandria Iron Works.....	1,154.00	926.00	1,046.00	3,050.00

PHILLIPS SCHOOL BUILDING, NO. 81.

A. F. Jorss.....	\$1,614.33	\$1,371.17	\$1,019.83	\$4,305.33
Chas. White & Co.....	2,800.00			
C. A. Schneider Sons.....	2,411.00	1,577.00	1,822.00	5,810.00
Alexandria Iron Works.....	1,625.00	978.00	1,046.00	3,555.00

VAN BUREN SCHOOL BUILDING, NO. 87.

A. F. Jorss.....	\$1,176.20	\$1,283.17	\$1,018.18	\$3,474.45
Chas. White & Co.....	1,845.00			
C. A. Schneider Sons.....	2,411.00	1,460.00	1,767.00	4,753.00
Alexandria Iron Works.....	1,154.00	917.00	1,046.00	3,040.00

LOGAN SCHOOL BUILDING, NO. 90.

A. F. Jorss.....	\$1,612.88	\$1,253.18	\$761.02	\$3,627.08
C. A. Schneider Sons.....	2,411.00	1,408.00	1,507.00	5,326.00
Alexandria Iron Works.....	1,625.00	915.00	500.00	2,965.00

Proposals for repairs to and changes in plumbing in Eastern High School building.

[Opened June 2, 1909.]

Wm. Rothwell & Son.....	\$2,612
Hutchinson & McCarthy.....	2,743
Coberth, Hanes & White Company.....	2,667
S. S. Shedd & Bro. Company.....	2,741

Proposals for certain improvements of the grounds around the Bryan School building, B street, between Thirteenth and Fourteenth streets SE.

[Opened June 3, 1909.]

Bidder.	Grad- ing.	Lime- stone.	Screen- ings.	Fence and hedge.	Fence.	Hedge.
R. J. Beall Construction Co.....	\$220.00	\$494.00	\$250.00	\$244.00		
Joseph H. Gibbons.....	771.00	1,533.00	314.00		46.300	45.00
Landscape Improvement Co.....	75.00	700.00	345.00		275.00	75.00

Schedule of proposals for making repairs to and changes in plumbing in Hayes School building, No. 107.

[Opened June 28, 1909.]

S. S. Shedd & Bro. Company.....	\$3,118.00
Hutchinson & McCarthy.....	3,363.00
Wm. Rothwell & Son.....	3,332.00
Darnell & Jones.....	3,394.00
Ed. J. Hannan.....	3,127.85

Schedule of proposals for making repairs to and changes in plumbing in Buchanan School building.

[Opened June 28, 1909.]

Ed. J. Hannan.....	No bid.
Darnell & Jones.....	\$3,573
S. S. Shedd & Bro. Company.....	3,284
Wm. Rothwell & Son.....	3,438
Hutchinson & McCarthy.....	3,523

Schedule of proposals for making repairs to and changes in plumbing in Greenleaf School building.

[Opened June 28, 1909.]

Wm. Rothwell & Son.....	\$3,818
S. S. Shedd & Bro. Company.....	3,580
Ed. J. Hannan.....	3,551
Hutchinson & McCarthy.....	3,700
Darnell & Jones.....	3,742

PROPOSALS FOR SEWER CONSTRUCTION.

Schedule of proposals for constructing sewer in New Hampshire avenue, from Otis street to Rock Creek Church road; also in New Hampshire avenue, from Otis street to Newton street; also in Newton street, from New Hampshire avenue to Georgia avenue.

[Bids opened August 17, 1908.]

Bidder.	Excava- tion.	Sewer brick masonry.	21-inch diameter pipe.	18-inch diameter pipe.	12-inch diameter pipe.	Amount of bid.
R. J. Beall Construction Co.....	\$0.74	\$15.00	.....	\$0.89	\$0.70	\$1,922.20
E. G. Gummel.....	.78	15.00	\$1.05	1.00	.78	2,049.10
James A. Coyle.....	.69	18.00	1.10	1.00	.79	2,009.30
W. F. Brenizer Co.....	.85	15.00	1.10	.95	.75	2,128.00

Schedule of proposals for constructing sewer in Arkansas avenue, between Emerson and Thirteenth street; also in Thirteenth street, between Arkansas avenue and Crittenden street; also in Crittenden street, between Thirteenth and Georgia avenue; also in Decatur street, between Thirteenth street and Arkansas avenue.

[Bids opened August 17, 1908.]

Bidder.	Excava- tion.	Sewer brick masonry.	12-inch diameter pipe.	Amount of bid.
R. J. Beall Construction Co.....	\$0.65	\$13.50	\$0.70	\$2,394.50
James A. Coyle.....	.68	16.00	.69	2,461.80
E. G. Gummel.....	.78	14.00	.78	2,724.60
W. F. Brenizer Co.....	.80	15.00	.70	2,624.00

Proposals for construction of Section C, east side intercepting sewer, Boundary to Brookland.

[Opened September 14, 1908.]

Bidder.	Ordinary excavation.	Brick masonry.		Concrete masonry "D."	6-inch subdrain pipe.
		Sewer.	Invert.		
Brennan Construction Co.....	\$1.25	\$15.00	\$20.00	\$11.90	\$0.40
James A. Coyle.....	.70	18.00	22.00	8.00	.30
The Warren F. Brenizer Co.....	.95	14.00	20.00	9.00	.30
Sherwood Engineering and Construction Co.....	.69	20.00	22.00	8.00	.30
E. G. Gummel.....	.79	14.00	18.00	7.75	.20

Proposals for sewers in Franklin street, between Queens Chapel road and Twenty-fourth street.

[Opened November 16, 1908.]

Bidder.	Ordinary excavation.	Sewer brick masonry.	15-inch diameter pipe.	12-inch diameter pipe.	10-inch diameter pipe.
Geo. Hyman.....	\$0.80	\$22.25	\$1.02	\$0.93	\$0.84
The Warren F. Brenizer Co.....	.90	15.00	.85	.70	.63
E. G. Gummel.....	1.50	16.00	1.00	.90	.80

Proposals for sewers in Rock Creek Church road.

[Opened November 16, 1908.]

Bidder.	Ordinary excavation.	Brick masonry.		Concrete masonry.		Invert block.	6-inch sub-drain pipe.
		Sewer.	Vitrified.	"B."	"C."		
R. J. Beall Construction Co.....	\$0.93	\$15.50	\$21.00	\$9.40	\$8.90	\$1.00	\$0.30
The Warren F. Brenizer Co.....	.85	16.00	22.00	9.00	9.00	.65	.30
E. G. Gummel.....	1.20	14.00	21.00	9.50	9.00	1.00	.40

Proposals for construction of Section D, east side intercepting sewer, Boundary to Brookland.

[Opened November 16, 1908.]

Bidder.	Ordinary excavation.	Embankment in place.	Brick masonry.		Concrete masonry "D."
			Sewer.	Invert.	
The Warren F. Brenizer Co.....	\$0.70	\$0.30	\$15.00	\$21.00	\$8.25
E. G. Gummel.....	1.00	.40	16.00	20.00	8.50
John E. Lyons.....	.85	.45	15.00	20.00	9.00

Proposals for sewers in Conduit road.

[Opened November 16, 1908.]

Bidder.	Ordinary excavation.	Sewer brick masonry.	24-inch diameter pipe.	21-inch diameter pipe.	18-inch diameter pipe.
R. J. Beall Construction Co.....	\$0.88	\$15.00	\$1.25	\$1.20	\$1.15
Geo. Hyman.....	.90	22.25	1.34	1.18	1.12
The Warren F. Brenizer Co.....	.63	14.00	1.12	1.00	.89
E. G. Gummel.....	.80	14.00	1.15	1.05	.95
Jas. A. Coyle.....	.75	14.00	1.19	1.09	.99

Schedule of proposals for construction of sewer in Arkansas avenue.

[Received November 30, 1908.]

Bidder.	Ordinary excavation.	Brick masonry.		Concrete masonry.		6-inch subdrain pipe.
		Sewer.	Invert.	"B."	"C."	
George Hyman.....	\$0.50	\$14.75	\$21.50	\$8.60	\$8.00	\$0.30
Warren F. Brenizer Co.....	.50	15.00	20.00	7.80	7.65	.30
E. G. Gummel.....	1.00	15.00	21.00	8.50	8.25	.30
Chas. T. Hookway, Syracuse, N. Y.....	.50	10.00	12.00	9.10	8.00	.60
R. J. Beall Construction Co.....	.67	15.00	20.50	8.75	8.25	.30

Proposals for the extension of the Luzon avenue sewer to Georgia avenue.

[Opened April 26, 1909.]

Bidder.	Excava- tion.	Sewer brick masonry.	18-inch diameter pipe.
E. G. Gummel.....	\$0.70	\$16.00	\$0.93
Lyons Bros.....	.85	18.00	1.09
Warren F. Brenizer Co.....	.65	15.00	.91
Stutler & Ready.....	.79	18.00	.90
Jas. A. Coyle.....	.80	20.00	1.20

Proposals for the construction of Fourth street S.E. relief sewer.

[Opened April 26, 1909.]

Bidder.	Excava- tion.	Brick masonry.		Concrete masonry, Class D.
		Sewer.	Vitrified.	
Lyons Bros.....	\$0.89	\$17.00	\$21.00	\$8.00
E. G. Gummel.....	.75	14.00	20.00	7.50
R. J. Beall Construction Co.....	1.04	14.00	20.00	7.75
Geo. Hyman.....	.75	14.00	21.00	6.80
Warren F. Brenizer Co.....	.75	13.00	20.00	7.71

Proposals for the construction of Falls Branch sewer from River road to Wisconsin avenue NW.

[Opened April 26, 1909.]

Bidder.	Excava- tion.	Sewer brick masonry.	18-inch diameter pipe.
Warren F. Brenizer Co.....	\$0.70	\$15.00	\$0.91
Lyons Bros.....	1.09	18.00	1.14
R. J. Beall Construction Co.....	1.00	16.00	1.10
Jas. A. Coyle.....	.74	18.00	1.10
E. G. Gummel.....	.70	16.00	.93

Proposal for the construction of trunk sewer, valley north of R street.

[Opened April 26, 1909.]

Bidder.	Excava- tion.	Sewer brick masonry.	24-inch diameter pipe.	21-inch diameter pipe.	18-inch diameter pipe.
R. J. Beall Construction Co.....	\$0.74	\$15.00	\$1.15	\$1.05	\$0.90
Jas. A. Coyle.....	.70	16.00	1.25	1.15	1.00
E. G. Gummel.....	.65	15.00	1.19	1.03	.87
Warren F. Brenizer Co.....	.59	13.50	1.14	1.00	.90

Proposals for the construction of section E, east side intercepting sewer, Boundary to Brookland.

[Opened May 24, 1909.]

Bidder.	Ordinary excavation (per linear foot).	Brick masonry (per cubic yard).		Concrete masonry "D" (per cubic yard).
		Sewer.	Invert.	
W. F. Brenizer Co.....	\$9.90	\$20.00	\$25.00	\$11.00
E. G. Gummel.....	9.50	20.00	30.00	12.00

Proposals for the construction of extension of the Rock Creek sewer to Military road.

[Opened May 24, 1909.]

Bidder.	Excava- tion (per cubic yard).	Sewer brick masonry (per cubic yard).	18-inch diameter pipe (per foot).
James A. Coyle.....	\$0.70	\$14.00	\$0.90
W. F. Brenizer Co.....	.70	15.00	.79
Stutler & Ready.....	.71	14.00	.90
E. G. Gummel.....	.50	14.00	.85
R. J. Beall Construction Co.....	.65	13.50	.89
Lyons Bros.....	.65	17.00	1.10

Schedule of proposals for construction of façade wall at the sewerage pumping station.

[Opened June 14, 1909.]

Bidder.	Excava- tion (per cubic yard).	Concrete masonry "A" (per cubic yard).	Piling driven and cut off (per linear foot).	Lumber for caps and flooring (per 1,000 feet b. m.).	Granite coping (per linear foot).
Thos. A. Barry & Co.....	\$1.00	\$17.50	\$0.24	\$40.00	\$3.45
Lyons Bros.....	2.00	17.00	.40	70.00	4.50
The Warren F. Brenizer Co.....	4.00	10.00	.25	50.00	7.00

Schedule of proposals for construction of Missouri avenue trunk sewer and outlet section.

[Opened June 14, 1909.]

Bidder.	Excava- tion (per cubic yard).	Brick masonry (per cubic yard).		Concrete masonry "D" (per cubic yard).	Invert block (per linear foot).	6-inch sub- drain pipe (per linear foot).
		Sewer.	Vitrified.			
Warren F. Brenizer Co.....	\$0.84	\$13.50	\$20.00	\$7.35	\$0.75	\$0.30
E. G. Gummel.....	1.50	15.50	22.30	8.50	1.00	.30

Schedule of proposals for the construction of extension of Water and L streets intercepting sewer.

[Opened June 14, 1909.]

Bidder.	Excava- tion (per cubic yard).	Sewer brick masonry (per cubic yard).	15-inch di- ameter sewer (per linear foot).	12-inch di- ameter sewer (per linear foot).	6-inch di- ameter sewer (per linear foot).
The Warren F. Brenizer Co.....	\$1.50	\$15.00	\$0.80	\$0.70	\$0.50
E. G. Gummel.....	1.50	15.00	1.25	1.15	.75

Schedule of proposals for the extension of Luzon avenue sewer from Military road to Army Hospital grounds.

[Opened June 14, 1909.]

Bidder.	Excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	18-inch diameter pipe sewer (per linear foot).
M. A. Gleeson.....	\$0.66	\$20.50	\$0.98
The Warren F. Brenizer Co.....	.65	15.00	.85
E. G. Gummel.....	.65	15.00	.90

Schedule of proposals for construction of sewers for District of Columbia.

[Opened June 22, 1909.]

SEWER "A."

Bidder.	Excavation (per cubic yard).	Sewer brick masonry.	18-inch diameter pipe sewer (per linear foot).	12-inch diameter pipe sewer (per linear foot).
Warren F. Brenizer.....	\$0.50	\$16.00	\$0.83	\$0.70
James A. Coyle.....	.50	14.00	.90	.70
E. G. Gummel.....	.60	14.00	.85	.62
Taylor-Sullivan & Leue.....	.63	15.00	.80	.68

SEWER "B."

Bidder.	Excavation (per cubic yard).	Sewer brick masonry.	10-inch diameter pipe sewer (per linear foot).
Warren F. Brenizer.....	\$0.95	\$16.00	\$0.70
James A. Coyle.....	.80	20.00	.80
E. G. Gummel.....	.80	15.00	.58
Taylor-Sullivan & Leue.....	.75	15.00	.50

SEWER "C."

Bidder.	Excavation (per cubic yard).	Masonry.	18-inch diameter sewer.	12-inch diameter sewer.	10-inch diameter sewer.
Warren F. Brenizer.....	\$0.95	\$16.00	\$1.00	\$0.90	\$0.70
James A. Coyle.....	.90	19.00	1.20	.80	.70
E. G. Gummel.....	.80	15.00	.95	.70	.60
Taylor-Sullivan & Leue.....	.75	15.00	.80	.60	.50

SEWER "D."

Bidder.	Excavation (per cubic yard).	Masonry.	15-inch diameter sewer.	12-inch diameter sewer.	10-inch diameter sewer.
Warren F. Brenizer.....	\$1.40	\$16.00	\$1.00	\$0.85	\$0.70
James A. Coyle.....	1.00	20.00	1.00	.90	.85
E. G. Gummel.....	.90	14.00	.80	.62	.56

Schedule of proposals for making sewer extensions at District of Columbia crematory.

[Opened June 28, 1909.]

Coberth, Hanes & White Company	\$192.00
E. F. Brooks Company	132.24
J. R. Quinter & Son	188.00
M. J. O'Brien & Sons	190.00
Milton Bairstow	111.00
Robt. A. Gibb	189.50

PROPOSALS FOR GRADING.

Proposals, per cubic yard, for grading Sixteenth street NW., between Webster and Kennedy streets.

[Opened April 10, 1909.]

Geo. B. Mullin	\$0.27½
Geo. Hyman	.30
Harper & Voigt	.46½
James W. Bean	.29
E. G. Gummel	.35
L. M. Johnston	.74
Fisher & Carozza	.39

Proposals, per cubic yard, for grading Massachusetts avenue NW., between Wisconsin avenue and Nebraska avenue.

[Opened April 24, 1909.]

Drake & Stratton Company	\$0.29
George Hyman	.21½
Jas. J. Overn	.22½
Fisher & Carozza	.23½
Jas. W. Bean	.22
E. Saxton	.32
The Warren F. Brenizer Company	.24½
E. G. Gummel	.24

Schedule of proposals for grading and improving suburban streets and avenues.

[Opened June 19, 1909.]

Bidder.	Grading (per cubic yard).	Setting 6 by 20 granite or bluestone curb (per linear foot).	Setting 8 by 8 granite curb (per linear foot).	Paving or repaving cobble or granite block gut- ters (per square yard).	Paving vit- rified block gutters on gravel base (per square yard).
James W. Bean	\$0.50	\$0.36	\$0.44	\$0.33	\$0.55
Geo. B. Mullin	.57	.29	.33	.43	.79
Thos. R. Riley & Co.	.49	.45	.50	.55	.45
E. G. Gummel	.39	.27	.37	.37	.59

Schedule of proposals, per cubic yard, for grading certain streets.

[Opened June 26, 1909.]

Bidder.	Upton street nw.	M street ne.	T street ne.
Geo. B. Mullin			
Geo. Hyman	\$0.37½		
James Morton Duncan	.24½	\$0.35	\$0.50
Burr Bros.	.60		
Stutler & Ready		.39	.74
Thos. R. Riley & Co.		.44	.47
E. G. Gummel	.49	.36	.41
Harper & Voigt	.42		.92
Fisher & Carozza	.28½	.30½	
James W. Bean	.38		.89
		.55	

PROPOSALS FOR ROADWAY PAVING.

Schedule of proposals, per square yard, for paving streets and avenues with sheet asphalt.

[Opened May 15, 1909.]

Bidder.	Laying standard asphalt pavement (2½-inch asphalt surface, 2-inch binder before compression), with 6-inch concrete base.	Laying vitrified block, with 6-inch concrete base.
Cranford Paving Co	\$1.45½	\$1.21
Brennan Construction Co.....	1.67	1.29

Schedule of proposals, per square yard, for laying asphalt block pavements.

[Opened May 15, 1909.]

Washington Asphalt Block and Tile Company:	
Laying 5-inch asphalt block pavement with gravel base, inside old city limits.....	\$1.80
Laying 4-inch asphalt block pavement with gravel base—	
Inside old city limits.....	1.65
Outside old city limits and west of Rock Creek	1.80
Laying 3-inch asphalt block pavement with 4-inch concrete base	2.00

Schedule of proposals for laying asphalt roadway surface and binder on the roadway of the New Jersey Avenue Bridge across Virginia avenue and the tracks of the Philadelphia, Baltimore and Washington Railroad Company.

[Opened June 30, 1909.]

The Cranford Paving Company:	
Asphalt surface	per square yard.. \$0.73
Asphalt binder	per cubic foot.. .25

Schedule of proposals, per square yard, for paving the roadway of the Anacostia Bridge and the roadway of the bridge across the Baltimore and Ohio Railroad track on the line of the extension of Monroe street, Anacostia, with sheet asphalt.

[Opened September 3, 1908.]

Item.	Brennan Construction Co.	Cranford Paving Co.
Laying standard asphalt pavement (2½-inch asphalt surface and 2-inch binder before compression) between exterior rails of tracks on said bridges, etc....	\$1.23	\$1.43
Laying standard asphalt pavement (2½-inch asphalt surface and 2-inch binder before compression) between the curb lines and 2 lines exterior and parallel to the exterior rails, etc.	1.23	1.43
Laying vitrified block adjacent to rails of street-car tracks.....	.90	1.40

PROPOSALS FOR BRIDGE CONSTRUCTION.

Schedule of proposals for widening a concrete bridge on the line of Sixteenth street extended across Piney Branch.

[Opened May 22, 1909.]

Item.	Bidders.							
	Hopkins-Barnett Co.	T. H. Riddle.	Cranford Paving Co.	Chas. B. Clark & Co.	McCor-miel & Co.	G. & W. Mfg. Co.	Balto-Ferro Concrete Co.	Penn Bridge Co.
Price complete.....	\$79,500.00	\$79,600.00	\$61,770.00	\$84,500.00	\$71,705.00	\$72,690.00	\$76,480.00	\$79,375.00
Price per cubic yard for excavation:								
Earth.....	1.00	.40	.65	.50	.85	.60	1.00	.70
Rotten rock.....	2.00	1.00	.90	1.00	1.10	1.00	1.90	.95
Hard rock.....	5.00	2.00	2.00	3.00	2.25	3.00	2.60	1.10
Price per cubic yard for concrete:								
Foundation concrete.....	6.90	6.00	7.00	6.50	6.75	11.00	6.00	7.90
Parapet concrete, exclusive of reinforcement.....	10.00	7.00	9.00	7.00	12.00	11.00	9.65	12.50
Wall concrete, exclusive of reinforcement.....	8.50	7.00	9.00	7.00	9.00	11.00	9.65	8.50
Column concrete, exclusive of reinforcement.....	12.00	30.00	9.00	8.00	12.00	11.00	16.00	9.00
Slab, girder, beam, and strut concrete, exclusive of reinforcement.....	9.00	20.00	9.00	10.00	12.00	11.00	11.40	11.25
Price per pound for steel:								
Structural steel...	.024	.10	.03	.04	.03	.05	.03	.03
Reinforcing steel.	.03	.10	.02	.04	.03	.03	.027	.03

PROPOSALS FOR WORK ON UNION STATION PLAZA.

Schedule of proposals for ornamental ironwork for Union Station Plaza improvements, Washington, D. C.

[Opened October 16, 1908.]

Item.	Chas. P. Biggin Co.	Chicago Ornamental Iron Co.	L. Schreiber & Sons Co.
Furnishing in place all ornamental ironwork complete.....	\$25,569	\$24,588	\$29,633
Furnishing in place all ornamental ironwork for portions of central island, island Q, and island S, etc.....	13,370	12,465	3,805
Furnishing in place all ornamental ironwork in connection with three flagstuffs.....	7,671	9,200	12,693

Schedule of proposals for granite work for Union Station plaza improvements, Washington, D. C.

[Opened October 16, 1908.]

Item.	David M. Andrew Co.	Woodbury Granite Co.
Furnishing in place all granite work.....		
Furnishing in place all granite work for portions of central island, etc.....	\$67,000	\$65,000
Furnishing in place all granite work for three flagstuffs.....	30,000	30,000
	4,000	4,200

Schedule of proposals for foundations, concrete piles, and masonry work for Union Station plaza improvements, Washington, D. C.

[Opened October 16, 1908.]

Item.	Rudolph S. Blome Co.	Cranford Paving Co.
Furnishing in place all foundations, concrete piles, and masonry work, etc...	\$29,950	\$26,750
Furnishing in place all foundations, concrete piles, and masonry work for portion of central island, etc.	10,750	8,687
Furnishing in place all foundations, concrete piles, and masonry work in connection with the three flagstaffs	1,800	1,350
Laying cement tile pavement over area covered by flagstaff bases, etc.:		
With 8-inch cinder foundation, etc.	155	247
Omitting 8-inch cinder foundation, etc.	145	227
Furnishing in place 8-inch cinder base, etc.		
Beneath walks and pavements of portions of central island, etc.	225	600
Beneath all walks and pavements lying beyond terminal property line.	675	1,600
Furnishing in place cement and cement tile pavements, etc.:		
For portions of central island, etc.	4,400	5,600
For all walks and pavements lying without terminal property line.	12,100	13,450

MISCELLANEOUS PROPOSALS.

Schedule of proposals for engines for electric-generating plant at the sewerage pumping station, Washington, D. C.

[Opened September 14, 1908.]

Ball Engine Company, Philadelphia (for 2).....	\$8,944
The Shepherd Engineering Company, Williamsport, Pa. (each).....	2,563
B. F. Sturtevant Company, Hyde Park, Mass. (for 2).....	5,690

Schedule of proposals for plumbing fixtures in the hydrotherapeutic wards of the Washington Asylum.

[Opened September 23, 1908.]

Wm. Rothwell & Sons.....	\$1,700
Alternate bid.....	1,587
Ed. J. Hannan.....	1,849
Darnall & Jones.....	1,586

Schedule of proposals for work at crematorium.

[Opened October 17, 1909.]

Joseph H. Gibbons.....	\$916
Benj. B. Knell.....	942
Frank C. Potts.....	877

Proposals for construction of watchmen's shed and storeroom at Second and N streets NE.

[Opened November 11, 1908.]

W. E. Mooney.....	\$491.04
Jos. H. Gibbons.....	773.00
Benj. B. Knell.....	736.70
Pavarini & Wyne (Incorporated).....	860.00

*Schedule of auxiliary water system and fire protection at the Home for the Aged and Infirm,
Blue Plains, D. C.*

[Opened November 21, 1908.]

Items.	G. & W. Man- ufacturing Co.	P. H. & J. Conlan.	McCay Engi- neering Co.
Price complete.....	\$11,943.00	\$16,250.00	\$13,734.00
Proposal A.....	375.00	300.00	240.00
Proposal B.....		1,050.00	3,842.00
Alternate C.....	1,075.00	1,800.00	1,882.00
Alternate D.....	375.00	500.00	1,602.00
Alternate E.....	289.00	500.00	1,686.00
Alternate F.....	500.00	300.00	500.00
Alternate G.....	600.00	100.00	140.00
Alternate H.....		100.00	430.00
WELL.			
8-inch tube, 300 feet deep, driven.....	1,575.00	4.25	1,400.00
6-inch tube, 300 feet deep.....	275.00	4.25	250.00
6-inch tube, 300 to 325 feet.....	3.80	4.25	4.35
6-inch tube, 325 to 350 feet.....	3.95	4.25	4.60
6-inch tube, 350 to 375 feet.....	4.40	4.25	4.85
6-inch tube, 375 to 400 feet.....	4.55	4.25	5.10
6-inch tube, 400 to 425 feet.....	4.75	4.25	5.35
6-inch tube, 425 to 450 feet.....	4.95	4.25	5.60
6-inch tube, 450 to 475 feet.....	5.35	4.25	5.85
6-inch tube, 475 to 500 feet.....	5.55	4.25	6.10

*Schedule of auxiliary water system and fire protection at the Home for the Aged and Infirm,
Blue Plains, D. C.*

[Opened December 21, 1908.]

Items.	P. H. & J. Conlan.	G. & W. Man- ufacturing Co.	McCay Engi- neering Co.
Price complete.....	\$6,388.00	\$6,973.00	\$7,687.00
WELL.			
8-inch tube, 300 feet deep, driven.....	1,275.00	1,574.00	1,400.00
6-inch tube, 300 feet deep, etc.....	350.00	324.00	260.00
6-inch tube, 300 to 325 feet, etc.....	4.25	395.00	4.35
6-inch tube, 325 to 350 feet, etc.....	4.25	4.05	4.60
6-inch tube, 350 to 375 feet, etc.....	4.25	4.62	4.85
6-inch tube, 375 to 400 feet, etc.....	4.25	4.75	5.10
6-inch tube, 400 to 425 feet, etc.....	4.25	4.95	5.35
6-inch tube, 425 to 450 feet, etc.....	4.25	5.15	5.60
6-inch tube, 450 to 475 feet, etc.....	4.25	5.45	5.85
6-inch tube, 475 to 500 feet, etc.....	4.25	5.80	6.10

*Schedule of proposals for cement work in hydrotherapeutic ward at the Washington Asylum,
Nineteenth and C streets SE.*

[Opened December 23, 1908.]

R. J. Beall Construction Company..... \$70

Schedule of proposals for engine-house site for Company No. 2, Fire Department.

[Received March 31, 1909.]

Bidder.	Location.	Price.
Theo. M. Judd.....	Lot 4, square 319, 19.8 by 95.1, 1,862 square feet.....	\$31,000
E. F. Droop's executors.....	Part lot 22, square 2088, 50 by 100.....	52,500
Walter A. Brown.....	1204 E nw., part lots 10 and 11, square 291, 43 by 75; 18.97 by 75, and improved.....	22,000
L. S. Lipscomb.....	1204 E nw., part lot 10, square 291, 24 by 75.....	24,000
Do.....	1106 E nw., part lot 10, 3,150 square feet; part lot 8, square 322, 27 by 75.....	36,000
Jos. I. Weller.....	719 Twelfth nw., 2,805 square feet, n. half lot 6, square 319, 29.50 by 951.....	44,496
Do.....	S. 29, lot 7, square 319, 2,757 square feet.....	
Jno. A. Hamilton.....	510 Tenthnw., 1,419 square feet, n. 16.8 by 85.1, lot 10, square 347.....	41,756
Do.....	512 Tenth nw., s. one-half lot 15, square 347, 2,377 square feet.....	
Do.....	N. one-half lot 15, square 347.....	28,524

Schedule of proposals for school sites.

[Opened April 20, 1909.]

Bidder.	Location.	Price.
<i>Northwest.</i>		
Thos. J. Fisher & Co.....	(Square 2078, Oak View.....)	\$13,402.80
F. Cushing Daniel.....	(Square 1920, Fairview Heights.....)	15,000.00
Joseph I. Weller.....	(Square 2088, Cathedral avenue.....)	21,262.50
Gasch & Birge.....	(Square 2087, Cleveland Heights.....)	16,419.55
L. S. Lipscomb.....	(Square 2079, Cleveland Park.....)	6,867.67
Ellerson & Wemple.....	(Square 2078, Cleveland Park.....)	5,536.80
Chas. S. Muir & Co.....	(Square 1920, 200 by 200 feet.....)	15,400.00
Joseph I. Weller.....	(Square 2075, Richmond Park.....)	10,500.00
	(Square corner Thirty-third street and Highland Park.....)	6,000.00
	(Square north of Spring road, between Thirteenth and Sixteenth streets, Osborn tract.....)	
<i>Southeast.</i>		
Joseph I. Weller.....	Square 1046.....	18,000.00
Jas. S. Hoge.....	Square 1047.....	a. 23
M. C. Thompson (Perpetual Building Association).....	Square 878.....	10,000.00
L. S. Lipscomb.....	Square 1043.....	a. 45
Joseph I. Weller.....	Square 444, adjacent McKinley Manual Training School.....	100,000.00
L. S. Lipscomb.....	do.....	62,750.00
<i>Northwest.</i>		
L. S. Lipscomb.....	Square 417, Eighth and T streets.....	49,750.00
Joseph I. Weller.....	Square 364.....	49,991.00

a Price per square foot.

Schedule of proposals for furnishing one automobile and two motor trucks for the District of Columbia.

[Opened May 22, 1909.]

Bidder.	Automobile runabout	Motor trucks (each).
Auto Car Co.....	\$1,870.00	\$1,800.00
Buick Motor Co.....	1,075.00	1,100.00
Do.....	1,050.00	1,100.00
H. Cornell Wilson & Bro.....		1,100.00
Chas. E. Miller & Bro.....	950.00	
Cook & Stoddard Co.....	997.50	
Josephus Wells.....	990.00	1,250.00
Rapid Motor Vehicle Co.....		1,785.00
Clayton Graff.....	900.00	1,000.00

Schedule of proposal for construction of wharf and bulkheads, including dredging at District wharf, Seventh Street channel, between Ninth and Tenth streets SW.

[Opened June 12, 1909.]

Bidder.	Dredging (per cubic yard).	Excavation (per cubic yard).	Back fill (per cubic yard).	Old timber removed (per 1,000 feet b. in).	Old piles removed (each).	New piles furnished and driven (each).
Carter & Clarke.....	\$0.55	\$1.00	\$0.50	\$10.00	\$4.00	\$11.00
Thomas Banks.....	.45	.75	.40	8.00	2.50	12.60
Richard Parrott.....	.75	.50	.50	10.00	3.00	10.00

Bidder.	New wharf complete, without piles.	New timber crib, complete.	New sheeting (retaining wall).	Tie rods, etc. (per pound).	Concrete in place (per cubic yard).
Carter & Clarke.....	\$750.00	\$1,050.00	\$70.00	\$0.10	\$10.50
Thomas Banks.....	587.44	1,011.24	73.00	.10	10.00
Richard Parrott.....	900.00	1,950.00	60.00	.05	8.00

Schedule of proposals for furnishing cast-iron water pipe for water department, District of Columbia.

[Opened June 21, 1909.]

Bidder	3-inch pipe.	4-inch pipe.	6-inch pipe.	8-inch pipe.	12-inch pipe.	20-inch pipe.	20-inch pipe, shell 0".92 thick.	20-inch pipe, shell 1".03 thick.
Glamorgan Pipe and Foundry Co.	\$29.90	\$25.42	\$24.98	\$24.57	\$24.02	\$24.02	\$24.02	\$24.02
Lynchburg Foundry Co.	29.86	25.86	24.86	24.86	24.86	24.86	24.86	24.86
United States Cast Iron Pipe and Foundry Co.	33.60	29.00	26.77	25.65	25.65	25.65	25.65	25.65
	30.00	25.90	23.90	22.90	22.90	22.90	22.90	22.90
Camden Iron Works.	40.00	28.50	26.25	26.25	26.25	25.50	25.50	25.50
	41.00	29.50	27.25	26.75	26.75	26.00	26.00	26.00
Standard Cast Iron Pipe and Foundry Co.	33.82	27.10	27.10	27.10	27.10	27.10	27.10	27.10

Schedule of proposals for furnishing cast-iron water pipe specials.

[Opened June 28, 1909.]

Item.	Standard Cast Iron Pipe and Foundry Co.	The Glamorgan Pipe and Foundry Co.	United States Cast Iron Pipe and Foundry Co.; Land Title Co.	Builders Iron Foundry.	Lynchburg Foundry Co.
Thirty-four tons cast-iron water pipe specials, sizes 3 to 12 inches:					
Standard special Northeast Water-works Association, per ton.	\$51.48	\$53.43	\$47.60		
Standard patterns, District of Columbia water department, per ton.	51.48			a \$2,085.00	\$51.00
Fifty-four tons cast-iron water pipe specials, sizes 16 to 36 inches:					
Standard special Northeast Water-works Association, per ton.	51.48	53.43	47.60		61.20
Standard patterns District of Columbia water department, per ton.	51.48			a 3,900.00	

a Price per lot.

Schedule of proposals for making electric-light installation at the crematory.

[Opened June 29, 1909.]

Thos. J. Williams & Co.	\$449.00
Robert Smith (trading as Capital Electric Company)	435.00
Bessman & Trouland.	486.20
National Electrical Supply Company	430.00

Schedule of proposals for unloading from cars and hauling broken stone from Baltimore and Ohio Railroad siding at Chevy Chase, Md., to Chevy Chase circle and vicinity.

[Opened August 17, 1908.]

Bidder.	Per cubic yard.	Each addi- tional one- fourth mile.
E. C. Keys.	\$0.95	\$0.20
Geo. Hyman.	1.50	.10
L. M. Johnston.	.87	.05
G. B. Mullin.	.83	.06
E. G. Gummel.	1.28	.20
Littlefield, Alvord & Co.	1.50	.10

Schedule of proposals for constructing culverts in Mills avenue NE., and in Minnesota avenue SE.

[Opened August 22, 1908.]

Bidder.	Mills avenue.	Minnesota avenue.
E. G. Gummel.....	\$905.35	\$651.35
R. J. Beall Construction Co.....	1,177.77	1,249.50
John E. Lyons.....	1,595.00	1,189.00
W. F. Brenizer Co.....	975.00	700.00

PROPOSALS FOR DIGGING DEEP WELLS AT SUBURBAN SCHOOLS.

Schedule of proposals for drilling deep wells in schools.

[Opened June 23, 1909.]

Bidder.	Conduit Road School.				Bunker Hill School.			
	1.	2.	3.	4.	1.	2.	3.	4.
John B. Rulon.....	\$399.00	\$2.95	\$2.75	{ \$2.75 .40 }	\$474.00	\$3.00	\$2.75	{ \$2.75 .40 }
P. H. & J. Conlan.....					456.25	4.00	2.25	3.50
Columbia Pump and Well Co.....	275.00	2.50	2.00	.75	327.50	2.50	2.00	.75

Bidder.	Benning School.				Good Hope School.			
	1.	2.	3.	4.	1.	2.	3.	4.
John B. Rulon.....	\$698.00	\$3.40	\$2.80	{ \$2.80 .40 }	\$698.00	\$3.40	\$2.80	{ \$2.80 .40 }
P. H. & J. Conlan.....	700.00	3.75	2.50	3.25	750.00	4.00	2.00	3.25
Columbia Pump and Well Co.....	485.00	2.50	2.00	1.00	485.00	2.50	2.00	1.00

Bidder.	Chain Bridge School.				Garfield School.			
	1.	2.	3.	4.	1.	2.	3.	4.
John B. Rulon.....	\$474.00	\$3.00	\$2.75	{ \$2.75 .40 }	\$869.00	\$3.45	\$2.90	{ \$3.00 .75 .40 }
P. H. & J. Conlan.....								
Columbia Pump and Well Co.....	327.50	2.50	2.00	.75	585.00	2.50	2.50	1.00

Bidder.	Stanton School.				Congress Heights School.			
	1.	2.	3.	4.	1.	2.	3.	4.
John B. Rulon.....	\$695.00	\$3.45	\$2.90	{ \$3.00 .40 }	\$998.00	\$4.00	\$2.80	{ \$3.00 a.75 b.40 }
P. H. & J. Conlan.....	750.00	4.00	2.00	3.25	1,500.00	5.50	2.00	5.00
Columbia Pump and Well Co.....	485.00	2.50	2.00	1.00	700.00	2.50	2.50	1.50

Bidder.	Hillsdale School.				Burrville School.			
	1.	2.	3.	4.	1.	2.	3.	4.
John B. Rulon.....	\$547.00	\$3.25	\$2.75	{ \$3.00 .40 }	\$394.00	\$3.25	\$2.75	{ \$2.75 .40 }
P. H. & J. Conlan.....	525.00	4.00	1.50	3.50				
Columbia Pump and Well Co.....	385.00	2.50	2.00	1.00	275.00	2.50	2.00	.75

a For 6-inch well.

b For 4-inch well.

Time for completion of work of drilling deep wells in schools.

	Weeks.	Working days.
Conduit Road School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	2	.....
Columbia Pump and Well Co.....	2	.....
Bunker Hill School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	2	65
Columbia Pump and Well Co.....	2	.....
Benning School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	4	70
Columbia Pump and Well Co.....	4	.....
Good Hope School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	4	75
Columbia Pump and Well Co.....	4	.....
Chain Bridge School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	4	.....
Columbia Pump and Well Co.....	4	.....
Garfield School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	6	.....
Columbia Pump and Well Co.....	6	.....
Stanton School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	6	75
Columbia Pump and Well Co.....	6	.....
Congress Heights School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	3	90
Columbia Pump and Well Co.....	3	.....
Hillsdale School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	6	60
Columbia Pump and Well Co.....	6	.....
Burrville School:		
John B. Rulon.....	8	.....
P. H. & J. Conlan.....	6	.....
Columbia Pump and Well Co.....	6	.....

Combination price.

J. B. Rulon.....	\$9,995
Columbia Pump and Well Co.....	4,330

**PROPOSALS FOR PLUMBING CHANGES IN PRIVATE PREMISES, MADE
IN ACCORDANCE WITH LAW.**

Schedule of proposals for making sewer and water connections at 221 M street SW.

[Opened June 23, 1909.]

Louis Conradis.....	\$195.00
Ed. J. Hannan.....	199.95
E. F. Brooks Company.....	206.50
Coberth, Hanes & White.....	191.00

Schedule of proposals for installing plumbing in premises 801 M street NW.

[Opened October 10, 1908.]

Wm. Rothwell & Son.....	\$165.00
Darnall & Jones.....	128.00
Louis Conradis.....	134.00
Geo. W. Hanes.....	158.00
Newman & Quigley.....	155.35

Schedule of proposals for plumbing work in dwelling 431 G street NW., Washington, D. C.

[Opened January 30, 1909.]

Frank Daly.....	\$25.00
Newman & Quigley.....	40.00
Robt. A. Gibbs.....	36.50
Louis Conradis.....	47.00
J. Cartmel.....	20.00
J. B. Lanahan.....	33.72

Schedule of proposals for making sewer and water connections at 115 M street SE.

[Opened June 23, 1909.]

Louis Conradis.....	\$229.36
E. F. Brooks Company.....	181.00
Coberth, Hanes & White Company.....	207.69
Ed. J. Hannan.....	185.00

Schedule of proposals for making sewer and water connections at places given below.

[Opened June 16, 1909.]

404 V street, Anacostia, D. C.:	
E. F. Brooks Company.....	\$160.50
Louis Conradis.....	225.00
S. S. Shedd & Bro. Company.....	178.75
Ed. J. Hannan.....	191.65
909 Twenty-sixth street NW.:	
E. F. Brooks Company.....	138.00
Louis Conradis.....	155.00
S. S. Shedd & Bro. Company.....	156.25
Ed. J. Hannan.....	155.55
1342 First street SW.	
E. F. Brooks Company.....	157.95
Louis Conradis.....	198.00
S. S. Shedd & Bro. Company.....	182.25
Ed. J. Hannan.....	179.50

Schedule of proposals for making sewer and water connections at 1601 and 1603 Levis street NE.

[Opened June 5, 1909.]

Bidder.	1601 Levis street ne.	1603 Levis street ne.
J. Cartmel, 2325 N st. nw.....	\$130.00	\$120.00
M. J. O'Brien & Sons, 23 1 st. nw.....	160.00	160.00
Hutchinson & McCarthy, 1317½ Fourteenth st.....	152.50	148.50
Louis Conradis, 1234 Ninth st. nw.....	160.00	165.00

Schedule of proposals for making sewer and water connections at 1618 Thirty-second street NW.

[Opened April 22, 1909.]

M. J. O'Brien & Son.....	\$182
Jonathan Cartmel.....	124
Robt. A. Gibbs.....	168
Louis Conradis.....	194
Hutchinson & McCarthy.....	167
William Rothwell & Son.....	233
Samuel Artz.....	218

STATEMENT OF CONTRACTS.

Contracts entered into by the District of Columbia during the fiscal year ending June 30, 1909.

1. HIGHWAY IMPROVEMENTS.

No.	Date.	Name of contractor.	Nature of contract.
	1908.		
4147	July 2	Colburn Bros.....	Laying cement sidewalks.
4155	July 21	Cranford Paving Co.....	Laying sheet-asphalt pavements.
4161	July 28	James Morton Duncan.....	Grading Mills avenue ne., between Franklin street and Rhode Island avenue.
4163	July 29	Stutler & Ready.....	Grading Kearney street ne., between Twelfth and Thirteenth streets.
4165	Aug. 6	Edward G. Gummel.....	Grading and improving certain streets and avenues, as follows: Webster nw., Fourteenth to Sixteenth; Monroe street ne., Michigan avenue to Tenth street; Sixteenth street nw.; Holmead place nw., Park road to Otis place; Fifth nw., U to W.; Second nw., south of Bryant; Manor street and Luray place, Warder street to Park place, and Warder street., Manor street to Luray place nw.; streets in Anacostia; Ingraham street. Brightwood avenue to Ninth street; Ontario place nw.; Ingleside terrace nw.
4196	Aug. 10	Geo. B. Mullin.....	Grading streets as follows: Albermarle street nw., Connecticut and Linnean avenues, Forty-first street, Livingston street and Chevy Chase circle, Rittenhouse, west of Broad Branch road.
4203	Aug. 14	Washington Asphalt Block and Tile Co.	Laying asphalt-block pavements.
4230	Aug. 21	Warren F. Brenizer Co.....	Grading Minnesota avenue, north of Pennsylvania avenue.
4245	Sept. 3	Richard C. Israel.....	Filling north approach to Connecticut Avenue Bridge.
4246	Sept. 1	Hassam Paving Co.....	Laying alley pavement.
4255	Sept. 24	Brennan Construction Co.....	Paving roadway of Anacostia Bridge.
4302	Nov. 12	Cranford Paving Co.....	Paving south approach to Anacostia Bridge with granite block.
4309	Nov. 20	Allen Iron and Steel Co.....	Steel railing, north approach to the Anacostia Bridge.
4311	Nov. 24	W. B. Bradley & Co.....	Retaining wall along the west side of the north approach to the Anacostia Bridge.
4325	Nov. 5	Chicago Ornamental Iron Co....	Ornamental ironwork in connection with embellishment of Union Station Plaza.
4326	Nov. 6	Cranford Paving Co.....	Concrete foundations in connection with embellishment of Union Station Plaza.
4327	Dec. 17	Baltimore Bridge Co.....	Anchors, etc., south abutment Anacostia Bridge.
4336	Nov. 25	Woodbury Granite Co.....	Granite work in connection with embellishment of Union Station Plaza.
	1909.		
4343	Feb. 19	National Electrical Supply Co..	Electrical interlocking device at Anacostia Bridge.
4350	Apr. 30	Geo. B. Mullin.....	Grading Sixteenth street nw., extended between Webster and Kennedy streets.
4355	May 14	George Hyman.....	Grading Massachusetts avenue nw., between Wisconsin and Nebraska avenues.
4357	June 1	Cranford Paving Co.....	Laying sheet-asphalt pavements.
4358	....do....	Washington Asphalt Block and Tile Co.	Laying asphalt-block pavements.
4363	June 3	Cranford Paving Co.....	Widen bridge on line of Sixteenth street across Piney Branch.
4387	June 30	C. A. Schneider's Sons.....	Ironwork for repairs to Pennsylvania Avenue Bridge over Eastern Branch.

2. CONSTRUCTION OF SEWERS.

	1908.		
4152	July 13	James A. Coyle.....	Constructing sewer in North Carolina avenue se., between Third and Fourth, and in Fourth street se., between North Carolina avenue and Seward place.
4154	July 14	R. J. Beall Construction Co....	Constructing sewer in Delafield street nw., between Arkansas and Iowa avenues, and in Iowa avenue nw., between Delafield and Emerson streets.
4164	July 31	Edward G. Gummel.....	Constructing sewer in Cathedral avenue nw., between Woodley road and Connecticut avenue, and in Twenty-third street nw., between Woodley road and Calvert street.
4184	Aug. 10	James A. Coyle.....	Constructing sewer in Nineteenth street nw., between Lamont street and Park road, and in alleys in square 2606.

Contracts entered into by the District of Columbia during the fiscal year ending June 30, 1909—Continued.

2. CONSTRUCTION OF SEWERS—Continued.

No.	Date.	Name of contractor.	Nature of contract.
4233	1908. Sept. 4	R. J. Beall Construction Co.....	Constructing sewers in Arkansas avenue nw., between Emerson and Thirteenth; in Thirteenth nw., between Arkansas avenue and Crittenden street; in Crittenden street nw., between Thirteenth street and Georgia avenue; in Decatur nw., between Thirteenth street and Arkansas avenue.
4234	..do....	..do.....	Constructing sewers in New Hampshire avenue nw., between Otis street and Rock Creek Church road; in New Hampshire avenue nw., between Otis and Newton; and in Newton nw., between New Hampshire and Georgia avenues.
4244	Aug. 31	Edward G. Gummel.....	Constructing sewers in Minnesota avenue se., and in Mills avenue ne.
4254	Sept. 21	..do.....	Constructing section C of east side intercepting sewer, boundary to Brookland.
4282	Oct. 20	R. J. Beall Construction Co.....	Constructing sewer in Thirteenth street nw., between G and I streets.
4285	Oct. 26	Warren F. Brenizer Co.....	Constructing sewer in Fourteenth street se., crossing Water street.
4286	..do....	..do.....	Constructing sewer in S street nw., between Thirty-fifth and Thirty-seventh.
4287	..do....	..do.....	Constructing sections of Rock Creek and B street intercepting sewer.
4296	Oct. 29	Lake Stone Co.....	Constructing sewers in Congress Heights.
4297	Nov. 9	Edward G. Gummel.....	Do.
4308	Nov. 25	Warren F. Brenizer Co.....	Constructing sewer in Rock Creek Church road, from Warder avenue to Fifth street, and in Fifth street from Rock Creek Church road to Quincy street.
4312	..do....	..do.....	Constructing sewer in Franklin street ne., between Queens Chapel road and Twenty-fourth street; and in Twenty-fourth street ne., from Franklin street southward.
4313	..do....	..do.....	Constructing section D of the east side intercepting sewer, boundary to Brookland.
4314	..do....	..do.....	Constructing sewer in Conduit road between Foxhall and New Cut roads.
4321	Dec. 15	R. J. Beall Construction Co.....	Constructing sewer in Arkansas avenue nw., between Delafield and Decatur streets.
4351	1909. May 5	Warren F. Brenizer Co.....	Constructing sewer in grounds of Walter Reed Army Hospital.
4352	..do....	..do.....	Constructing sewer in valley north of R street between Rock Creek and Observatory lane in the U. S. Naval Observatory Grounds.
4354	May 12	George Hyman.....	Constructing sewer in Second street se., between Virginia and South Carolina avenues.
4356	May 14	Warren F. Brenizer Co.....	Constructing sewer in Davenport street nw., between River road and Forty-third street; and in Forty-third street nw., between Davenport and Fessenden; also in Fessenden street nw., between Forty-third and Wisconsin avenue.
4364	June 3	E. G. Gummel.....	Constructing sewer in Beach driveway, Rock Creek Park, from Broad Branch to the Military road.
4367	..do....	Warren F. Brenizer Co.....	Constructing sewer in Mills avenue ne., between Franklin street and Rhode Island avenue, being section E of east side intercepting sewer.
4378	June 28	E. G. Gummel.....	Constructing sewer in River road between Davenport and Chesapeake streets; in Chesapeake street between River road and Wisconsin avenue; in Wisconsin avenue between Chesapeake and Brandywine streets; also in Fessenden street, between Wisconsin avenue and Forty-first street; in Forty-first, between Fessenden and Davenport; in Davenport, between Forty first street and Belt road; in Belt road, between Davenport and Chesapeake streets; also, in Twenty-sixth street ne., between Evarts and Irving; in Irving, between Twenty-fourth and Twenty-sixth; in Twenty-fourth, between Irving street and Rhode Island avenue.
4379	June 22	Warren F. Brenizer Co.....	Constructing sewer in Water street sw., between L and P.
4380	June 23	..do.....	Constructing facade wall at sewerage pumping station.
4381	..do....	..do.....	Constructing sewer in Four-and-a-half street, between Maine and Missouri avenues.
4382	June 22	..do.....	Constructing sewer in grounds of Walter Reed Army Hospital.
4384	June 26	..do.....	Constructing sewer in Broad Branch road, between Soapstone Branch and Twenty-second street, and in Pleasant drive, between Thirty-second and McKinley streets.

Contracts entered into by the District of Columbia during the fiscal year ending June 30, 1909—Continued.

3. CONSTRUCTION MATERIAL, HAULING, ETC.—Continued.

No.	Date.	Name of contractor.	Nature of contract.
	1908.		
4151	July 2	Merchants Transfer and Storage Co.	Hauling.
4160	July 24	Lewis E. Smoot.....	Furnishing sand and gravel.
4166	July 1	Frederick Brick Works.....	Furnishing red sewer bricks.
4185	Aug. 4	A. P. Smith Manufacturing Co..	Curb and corporation cocks.
4187	Aug. 10	National Mortar Co.....	Mortar, etc.
4201	Aug. 14	Potomac Dredging Co.....	Sand and gravel.
4205	Aug. 12	Anderson Coupling Co.....	Curb and corporation cocks.
4200	Aug. 17	Lynchburg Foundry Co.....	Cast-iron water pipe.
4267	Oct. 5	Geo. B. Mullin.....	Hauling crushed stone, vicinity of Chevy Chase.
4269	Sept. 29	C. P. Mayer Brick Co.....	Furnishing vitrified brick.
4272	Oct. 10	American Sewer Pipe Co.....	Sewer pipe.
4280	Oct. 16	Clyde C. Lamond.....	Terra-cotta sewer pipe.
4303	Nov. 13	Columbia Granite and Dredging Co.	Furnishing crushed bluestone.
4320	Dec. 15	Cranford Paving Co.....	Crushing stone at Twenty-fifth and N streets nw.
4330	Dec. 14	Barret Manufacturing Co.....	Coal-tar paving pitch.
	1909.		
4345	Apr. 3	Maryland Portland Cement Co.	Furnishing Portland cement.
4346	Mar. 31	National Mortar Co.....	Do.
4348	Apr. 2	Rosslyn Supply Co.....	Do.
4371	June 19	I. J. Smith & Co. (Incorporated).	Granite curb.
4374	June 24	C. C. Lamond.....	Terra-cotta sewer pipe.
4375	June 23	American Sewer Pipe Co.....	Do.
4377	June 21	James M. Porter.....	Vitrified sewer brick.
4389	June 19	C. P. Mayer Brick Co.....	Vitrified paving block.
4390	June 28	National Mortar Co.....	Furnishing Portland cement.

4. BUILDING AND BUILDING REPAIRS.

	1908.		
4148	July 1	S. S. Shedd & Bro. Co.....	Plumbing work, Taylor School.
4149	..do..	..do..	Plumbing work, Phillips School.
4150	..do..	..do..	Plumbing work, Logan School.
4157	July 24	Darnall & Jones.....	Plumbing work, Patterson School.
4158	..do..	..do..	Plumbing work, Wilson School.
4159	..do..	..do..	Plumbing work, Orr School.
4162	July 29	C. A. Schneider's Sons.....	Outside stairways at Langdon School.
4169	July 21	A. F. Jorss.....	Fireproof stairways for school buildings.
4183	Aug. 10	..do..	Do.
4186	..do..	Alexandria Iron Works.....	Do.
4188	Aug. 11	St. Johns Manufacturing Co.....	Portable schoolhouses.
4217	Aug. 17	G. W. Forsberg.....	Steam boilers in M Street High School.
4224	Aug. 21	H. I. Gregory.....	Installing furnaces, John F. Cook School.
4225	..do..	..do..	Installing furnaces, Eckington School.
4226	..do..	..do..	Installing furnace, Morse School.
4250	Sept. 11	R. J. Beall Construction Co.....	Improving grounds of Emery School.
4257	Sept. 28	..do..	Improving grounds, Van Ness School.
4258	..do..	..do..	Constructing driveways, Lanier Heights engine house.
4232	Aug. 26	W. A. Fry.....	Fireproof stairway, Woodburn School.
4238	Aug. 24	F. S. Giehner.....	Fire escapes on school buildings.
4243	Aug. 31	Chas. White & Co.....	Fireproof stairways, Cranch School.
4248	Aug. 11	A. F. Jorss.....	Fire escapes on school buildings.
4251	Sept. 5	Jos. H. Gibbons.....	Completing addition to Emery School.
4263	Sept. 18	Frank C. Potts.....	Remodeling roofs, etc., McKinley Manual Training School.
4271	Oct. 10	Hutchinson & McCarthy.....	Plumbing repairs, Tenley School.
4276	Oct. 15	National Electrical Supply Co..	Wiring system for lighting Eastern Market.
4279	..do..	Caleb L. Sears.....	Moving frame school building, Hamilton road, Garfield.
4281	Oct. 8	Berger Manufacturing Co.....	Metal ceilings, Arthur School.
4284	Oct. 23	David J. Dunigan.....	Remodeling ventilating system of the police court building.
4295	Oct. 29	Darnall & Jones.....	Plumbing work, Brookland School.
4301	Nov. 13	R. J. Beall Construction Co.....	Improve grounds at Cook School.
4304	Nov. 14	Wm. Rothwell & Son.....	Plumbing work, hydrotherapeutic ward, Washington Asylum.
4306	Nov. 13	Burgess & Parsons.....	Construct shelter for employees at Bryant street pumping station.
4315	Nov. 27	Geo. A. Fuller Co.....	Construct addition to McKinley Manual Training School.
4316	Dec. 2	Frank C. Potts.....	Improving grounds at Petworth School site.
4317	Dec. 8	R. J. Beall Construction Co.....	Improving grounds at Gage School.

Contracts entered into by the District of Columbia during the fiscal year ending June 30, 1909—Continued.

4. BUILDING AND BUILDING REPAIRS—Continued.

No.	Date.	Name of contractor.	Nature of contract.
	1909.		
4334	Jan. 4	S. S. Shedd & Bro. Co.....	Plumbing work, Eckington School.
4337	Jan. 13	Thompson-Starrett Co.....	Construct 12-room school building on Hamilton road, Garfield, D. C.
4239	Jan. 16	Fred J. White.....	Exterior cast-iron stairways at Henry D. Cooke School.
4340	Feb. 6	Pavarini & Wyne.....	Constructing addition to Business High School.
4349	Apr. 30	Burgess & Parsons.....	Constructing 3-room school building on School street n.w.
4370	June 7	Alexandria Iron Works.....	Fire-proof stairways for school buildings.
4373	June 22	R. J. Beall Construction Co.....	Improving grounds of Bryan School.
4376	June 24	Wm. Rothwell & Son.....	Plumbing work at Eastern High School.
4388	June 29	Carroll Electric Co.....	Electrical apparatus M Street High School.

5. GENERAL SUPPLIES.

Contract No.	Date.	Name of contractor.	Nature of contract.
	1908.		
4156	July 14	Christopher Sower Co.....	School books.
4168	July 28	Woodward & Lothrop.....	Furniture and house furnishings.
4171	Aug. 7	Samuel D. Houck.....	Saddlery.
4172	Sept. 17	Thos. Somerville Co.....	Hardware and plumbing materials.
4174	Aug. 7	Lutz & Co.....	Hardware, drugs, and saddlery.
4175	July 22	J. Maury Dove Co.....	Fuel.
4176	Aug. 8	Lansburg & Bro.....	Furniture and dry goods.
4177	Aug. 7	Rudolph & West Co.....	Hardware.
4180	Aug. 10	Globe Printing Co.....	Printing.
4181	...do....	Somerset R. Waters.....	Groceries and provisions.
4182	Aug. 8	Frank Hume (Inc.).....	Do.
4189	Aug. 11	W. A. H. Church.....	Lumber.
4190	Aug. 8	W. T. Galliher & Bro.....	Do.
4191	Aug. 11	American Ice Co.....	Ice.
4192	Aug. 8	Hoover & Denham.....	Meats.
4193	Aug. 10	Josephus Wells.....	Groceries and provisions.
4194	Aug. 12	A. Gunnison & Co.....	Paints.
4195	...do....	J. Edw. Chapman.....	Fuel.
4197	Aug. 8	Tolman Laundry Co.....	Laundry.
4198	Aug. 10	Trang Educational Co.....	Stationery and school books.
4199	Aug. 13	R. Berberich's Sons.....	Boots and shoes.
4200	Aug. 12	American Flag Co.....	Flags.
4202	Aug. 11	Hoge & McDowell Co. (Inc.).....	Groceries and provisions.
4204	...do....	Ward W. Griffith.....	Fuel.
4206	Aug. 10	Freis, Beall & Sharp Co.....	Hardware.
4207	Aug. 11	Blum Bros.....	Furniture, dry goods, etc.
4208	Aug. 18	Maekall Bros.....	Drugs.
4210	Aug. 18	R. P. Clarke Co.....	Stationery and dry goods.
4211	Aug. 12	Corby Bros.....	Bread.
4212	Aug. 19	Louis Hartig.....	Hardware and saddlery.
4213	Aug. 14	W. & J. Sloane.....	Carpets and matting.
4214	Aug. 19	W. M. Galt & Co.....	Forage.
4218	...do....	Wm. Hahn & Co.....	Boots and shoes.
4219	Aug. 13	J. C. Ergood & Co.....	Groceries and provisions.
4220	Aug. 17	Armour & Co.....	Meats.
4221	...do....	Western Electric Co.....	Electrical supplies.
4222	Aug. 8	E. J. Murphy Co.....	Paints, glass, etc.
4227	Aug. 12	Cuyler & Mohler.....	Plumbing materials.
4229	Aug. 20	Chas. T. Robinson.....	Hardware.
4235	Aug. 14	Dulin & Martin Co. (Inc.).....	Furniture and house furnishings.
4236	Aug. 24	Geo. F. Muth & Co.....	Stationery, etc.
4237	Aug. 17	Fred. A. Schmidt.....	Do.
4239	Aug. 13	Weaver, Kengla & Co.....	Groceries and provisions.
4240	Aug. 27	Jas. B. Lambie Co. (Inc.).....	Furniture, etc.
4241	Aug. 31	Harry Kaufman Co.....	Boots and shoes.
4242	...do....	James F. Oyster.....	Butter and cheese.
4247	Aug. 26	Milton Bradley Co.....	Stationery, schoolbooks, etc.
4249	Sept. 9	Thomas W. Smith.....	Lumber.
4252	Sept. 18	Hugh Reilly.....	Paints, glass, etc.
4253	Sept. 15	Washington Tobacco Co.....	Tobacco.
4256	Aug. 20	Standard Oil Co.....	Oil.
4264	Sept. 30	Chas. G. Stott.....	Stationery.
4265	...do....	Wilkins-Sheiry Printing Co.....	Printing.
4270	Oct. 5	R. Carter Ballantyne.....	Stationery.

Contracts entered into by the District of Columbia during the fiscal year ending June 30, 1909—Continued.

5. GENERAL SUPPLIES.

No.	Date.	Name of contractor.	Nature of contract.
	1908.		
4274	Aug. 19	R. P. Andrews Paper Co.....	Stationery.
4275	Aug. 8	Swift & Co.....	Meats.
4277	Oct. 12	Z. D. Gilman.....	Drugs.
4289	Oct. 16	Geo. E. Howard.....	Printing.
4291	Aug. 25	Martin Wiegand.....	Lumber.
4292	Oct. 31	Norman T. Elliott Printing Co..	Printing.
4293	Oct. 29	A. G. Spaulding & Bros.....	Athletic goods.
4305	Nov. 16	W. B. Moses & Sons.....	Furniture.
4307	Nov. 9	Lutz & Co.....	Saddlery.
4335	Oct. 8	W. J. C. Dulaney.....	Stationery, etc.
	1909.		
4359	May 27	J. A. Whitfield.....	Meats, 1910.

6. MISCELLANEOUS.

	1908.		
4153	July 11	Littlefield, Alvord & Co.....	Moving offices of the government of the District of Columbia to the new District building.
4167	Aug. 4	Joseph Kaufman & Son.....	Furnishing 48 horses for the fire department.
4170	Aug. 7	John C. Knipp & Sons.....	Counters, screens, rails, etc., in new District building.
4173	Aug. 1	Gilbert D. Emerson.....	Binding for public library.
4178	Aug. 6	American La France Fire Engine Co.	Furnishing steam fire engine.
4179	...do....	...do....	Do.
4215	Aug. 13	...do....	Furnishing one aerial truck.
4216	Aug. 17	Gustave W. Forsberg.....	Oil tank at property yard, Second and N streets ne.
2223	Aug. 20	Robinson Fire Apparatus Manufacturing Co.	Chemical engine.
4228	...do....	J. P. Pfeiffer & Son.....	Installing refrigerators at Eastern Market.
4231	Aug. 21	John C. Knipp & Sons.....	Cupboards and lockers in new District building.
4259	Aug. 29	Potomac Electric Power Co.....	Street lighting.
4260	Sept. 30	Art Metal Construction Co.....	Metal file cases, surveyor's office.
4261	Sept. 12	Van Dorn Iron Works Co.....	Metal cabinets, Emery School.
4262	Sept. 30	Standard Underground Cable Co	Underground signal and telephone cable.
4266	Oct. 2	Chesapeake and Potomac Telephone Co.	Do.
4268	Oct. 6	Cook & Stoddard Co.....	Motor truck for water department.
4273	Oct. 9	W. B. Moses & Sons.....	Opera chairs, McKinley Manual Training School.
4278	Oct. 15	Jas. L. Parsons.....	Laboratory equipment, District building.
4283	Oct. 14	Thos. W. Smith.....	Cases for McKinley Manual Training School.
4288	Oct. 22	Elmer H. Catlin Co.....	Installing lighting fixtures in McKinley Manual Training School.
4290	Oct. 12	Fritz & Goedel Manufacturing Co.	Drawing tables for McKinley Manual Training School.
4294	Oct. 30	R. J. Beall Construction Co.....	Improving grounds of Eastern Market.
4298	Nov. 2	Oliver Machinery Co.....	Equipment for woodworking shop at McKinley Manual Training School.
4299	Nov. 6	Knox Automobile Co.....	Furnishing motor truck.
4300	Nov. 10	Shepherd Engineering Co.....	Two engines, sewerage pumping station.
4310	Oct. 28	B. F. Sturtevant Co.....	Increase equipment of forge shop at McKinley Manual Training School.
4318	Dec. 15	Eureka Fire Hose Manufacturing Co.	Furnish fire hose.
4319	Dec. 14	Walter H. Foster Co.....	Machinery and tools for McKinley Manual Training School.
4322	...do....	Pratt & Whitney.....	Do.
4323	Dec. 16	Niles-Bement-Pond Co.....	Do.
4324	Dec. 15	Fabric Fire Hose Co.....	Furnish fire hose.
4328	Dec. 16	Brown & Sharpe Manufacturing Co.	Machinery and tools for McKinley Manual Training School.
4329	Dec. 17	Manning, Maxwell & Moore.....	Do.
4331	...do....	M. Solmsen Fly Screen Co.....	Weather strips for windows in District Building.
4332	...do....	Gutta Percha and Rubber Manufacturing Co.	Furnish fire hose.
4333	Dec. 21	General Electric Co.....	Electrical equipment, District Building.
	1909.		
4338	Jan. 8	Woodward & Lothrop.....	Furniture and equipment for McKinley Manual Training School.
4341	Feb. 2	P. H. & J. Conlan.....	Auxiliary water system and fire-protection system at the Home for the Aged and Infirm.
4342	Jan. 28	James Clark, Jr., Electric Co..	Machinery and tools for McKinley Manual Training School.
4344	Mar. 8	American LaFrance Fire Engine Co.	Rebuilding fire engine for fire department.

Contracts entered into by the District of Columbia during the fiscal year ending June 30, 1909—Continued.

6. MISCELLANEOUS—Continued.

No.	Date.	Name of contractor.	Nature of contract.
	1908.		
4353	May 6	American Street Lighting Co...	Maintaining incandescent gas street lights.
4347	Apr. 12	H. F. Boswell.....	Repair boiler police boat Vigilant.
4360	May 27	Nelson Refrigerator Co.....	Cooling room in Emergency Hospital.
4361	do.....	Jas. Boyd & Bro. (Inc.).....	Chemical and hose combination wagon for fire department.
4362	June 2	Seagrave Co.....	Rubber-tired wheels for fire department apparatus.
4365	May 27	Robert Smith.....	Switchboards for McKinley Manual Training School.
4366	June 8	Derby Desk Co.....	Cases for drawing room at McKinley Manual Training School.
4368	June 11	Seagrave Co.....	Rubber tires for hose wagon for fire department.
4369	do.....	Leonhardt Wagon Manufacturing Co.	Ambulance for Emergency Hospital.
4372	June 23	Thomas Banks.....	Constructing wharf and bulkheads at District wharf, Seventh street channel, between Ninth and Tenth.
4383	June 29	Wm. F. Andrews.....	Paint corridors of District Building.
4385	do.....	F. S. Giehner.....	Playground equipment.
4386	June 23	American Street Lighting Co...	Naphtha street lighting.
4392	June 30	Taunton-New Bedford Copper Co.	Switchboards in the high schools.

REPORT OF THE WHARF COMMITTEE.

WASHINGTON, D. C., *August 18, 1909.*

SIR: The wharf committee has the honor to submit the following report of its operations during the fiscal year ending June 30, 1909. Accompanying the report is a list of the wharf property now under lease, from which it will be seen that the total amount received from rentals is \$16,604.50.

AVAILABLE WATER FRONTAGE.

The actual water frontage in the District of Columbia, with the exception of canals devoted to commerce is about 2 miles. The total available water frontage, exclusive of canals, which is practicable of commercial development, is about 18 miles; this length, however, includes the frontage set apart for parks and purposes of the United States—about 8 miles.

WHARVES ALONG THE WASHINGTON CHANNEL.

The most important wharf property under lease is that along the Washington Channel. This is a total frontage on the city side of 9,275 linear feet, of which 4,675 feet between the Arsenal and N street south is under the jurisdiction of the United States, and 4,600 feet between N street south and Fourteenth street is under the jurisdiction of the commissioners and under lease for commercial purposes.

The property under the jurisdiction of the commissioners was originally leased in 1903 for periods of five years each, with the privilege of renewal in all except one or two cases for a further period of five years. The original term expired March 15, 1908, and the leases have generally been renewed for five years from that time.

This is practically the only available commercial frontage, and here is located all the excursion and river traffic and most of the important commercial wharves. There have been some improvements in the wharves and structures made to this property during the year by the lessees, and some further improvement is now in progress. The general condition, however, along a great portion of the frontage is one of dilapidation, and an improvement in the appearance of the wharf structures is much needed. One noticeable improvement which has been accomplished during the year is the removal of a large ice house at the foot of Fourteenth street, which owing to its bad condition and its prominent location was particularly unsightly. This structure was removed as a condition to the transfer of a lease, and other conditions were made in this transfer toward a general improvement of this piece of wharf property.

THE FISH WHARF.

The fish wharf needs special consideration because its present insanitary condition is a menace to public health. This wharf has a water frontage of about 500 feet and an area of about 118,000 square feet. The rental which has been charged is \$1,200 per annum with a provision in the original lease that the lessee should expend at least \$3,000 in improvements. Prior to the expiration of his original lease, March 15, 1908, an examination of the sanitary condition of this wharf was made by the health officer, who reported that the fish and oyster houses located here were not provided with proper toilet facilities or sewerage, nor with floors of such material as would promote cleanliness and modern sanitation. The health officer recommended that before granting the lessee a renewal of the lease—to which he was entitled under certain conditions—he be required to place the wharf in sanitary condition. Notice was served on him to do so, but he neglected to comply with the requirements of this notice, involving an expenditure on his part of about \$4,000, and the commissioners then refused to renew his lease, entering legal proceedings to compel him to vacate the premises. The lessee applied for a restraining order to prevent such action, and the matter is now pending in the courts. After the institution of these legal proceedings an endeavor was made by your committee to arrive at some agreement with the lessee so as to insure the improvement of the property, but without success. As a consequence the lessee has been holding the property since March 15, 1908, without the payment of any rental therefor.

Your committee is of the opinion that the existing insanitary conditions at the fish wharf are a menace to health, demanding immediate remedy, and as the present lessee has had ample opportunity to make the necessary improvements and has failed to do so it recommends that Congress be asked to terminate this lease, thereby saving time in the making of this much-needed improvement, which can not now be made without a somewhat protracted legal procedure. It is further recommended that the commissioners be authorized either to establish a fish market at this wharf, to be conducted as are the other markets in the city, or to enter into a lease with a fish dealer or an association of fish dealers to operate a sanitary fish and oyster market. Your committee has reason to believe that either of these methods would improve the sanitary condition and at the same time produce an adequate revenue from this source, which they do not believe is being obtained from the present lessee.

DISTRICT WHARF.

An appropriation of \$4,000 was made in the District appropriation bill for the year 1909 for constructing a wharf on the river front, and one of the lessees of wharf property having given up his lease on March 15, 1909, the wharf committee recommended to the property clerk of the District of Columbia that he establish a wharf at the foot of Ninth street SW. for the receipt of construction materials, such as stone, sand, and gravel. A contract has been let for the construction of a wharf at this site, and the work of construction is now in progress and will be completed during the present year. An appropriation will be necessary to provide derricks and other means of removing materials from barges to the wharf in order that the full value of this wharf to the District of Columbia may be realized. From this wharf and property yard deliveries of material can be made to any part of the District with considerable saving to the District of Columbia.

HIRING BOATS TO MINORS.

Along this frontage there are a number of wharves used for pleasure boating and for the purpose of hiring small boats. Owing to the drowning of a small boy under the age of 16 who hired one of such boats from a lessee of one of these wharves, the commissioners directed your committee to prepare a regulation prohibiting the hiring of boats to any person 16 years of age or under. Such a regulation was drawn and was adopted as Article XXVa of the Police Regulations. This regulation is as follows:

"ART. XXVa. *Regulations for the government and control of wharf property.*—By virtue of the authority granted to the Commissioners of the District of Columbia by act of Congress approved March 3, 1899, relative to the control of wharf property and certain public spaces in the District of Columbia, the following regulation is hereby made:

"Sec. 1. No person owning, leasing, or controlling any wharves, piers, bulkheads, or structures thereon or waters adjacent thereto, or any basins, slips, docks, water fronts, land under water, or structures on any such places, in the District of Columbia, nor any agent or employee of such person, shall rent, lease, or hire to any person 16 years of age or under any boat of any description whatever. Any person violating the provisions of the foregoing regulation shall, on conviction thereof in the police court, be punished by a fine of not less than \$5 nor more than \$50 for each offense."

WHARVES ALONG THE ANACOSTIA RIVER.

This frontage is largely undeveloped, owing to the uncertainty regarding the ownership of the abutting land and riparian rights. In the District appropriation act for 1910 an appropriation was made for the employment of special counsel to investigate these matters, and the commissioners have taken action toward the employment of this counsel. In the meantime leases have been entered into with various persons for that portion of the frontage regarding which there is no doubt as to the ownership of the United States. This is at points where the streets of the city extend to the water. An examination of the accompanying table will show the number of leases granted.

Permission was granted the Superintendent of the United States Capitol Building and Grounds to locate a pumping station at the foot of First street SE., in connection with the building being erected in Garfield Park for heating and power purposes for the Capitol Building and the House and Senate Office buildings.

The United States has dredged a channel along the Anacostia River from the Potomac River to the navy-yard, and it is believed that when the question of the ownership of the land is settled a valuable water frontage will be afforded here. One permit

has been granted private parties to construct a wharf along the water frontage of square No. 708, but provision was made in the permit that there was no waiver of the rights of the United States in the event that it should be subsequently determined that no private riparian rights exist along this frontage.

The removal of the old Anacostia Bridge will add to the frontage along this river available for leasing purposes.

WHARVES ALONG THE JAMES CREEK CANAL.

The frontage available for wharf purposes along this canal extends from N street to the Potomac River and most of it is under lease. A wall exists on both sides along a portion of the canal, and the banks along this wall are used for the purposes of storage and sale of wood, lumber, and building material. While the canal is quite shallow and is constantly filling up, this frontage is commercially valuable and no difficulty is experienced in leasing it. The sewage disposal plans for a dike along the line of N street and the filling of the canal above that point to G street. Your committee believe that the canal should be kept open below N street, the canal wall extended, and the canal dredged and kept open by some means in order to afford wharfage facilities, which under existing conditions are necessary for taking care of the commerce of the city.

WHARVES ALONG THE GEORGETOWN CHANNEL.

All of the wharf property along this channel is under private control with the exception of the foot of streets. A lease has been entered into with the Brennan Construction Company for the foot of Thirty-first street; and the foot of Thirtieth street is used as a depot for unloading wood, the wharfage charged being paid to the District under the direction of the sealer of weights and measures.

IMPROVEMENT OF THE HARBOR FRONT.

The wharf committee again calls attention to its report on the improvement of the harbor front which was forwarded to Congress by the Commissioners May 23, 1908, and was printed as Senate Document No. 519, Sixtieth Congress, first session. The estimated cost of the work of improvement outlined in this report was, in round numbers, \$3,000,000, the greater portion of which was for the improvement of the frontage along the Washington channel, and the balance for the purchase of strips of land not now owned by the United States along the Potomac and Anacostia rivers. The Commissioners, in their estimates to Congress for the fiscal year 1910, submitted an estimate aggregating \$305,000 toward carrying out this plan of improvement, but no appropriation was made. We believe that an estimate should again be submitted to Congress at its next session for money to begin the improvements, either on the basis of the completed plans contained in the said Senate document, or upon these plans curtailed so as to cut down the present estimated cost without interfering with the ultimate and complete development of the river.

The improvement of conditions along the Washington channel is most urgent. While the various lessees have spent considerable money in buildings and repairs, in order to improve their holdings and make them more available for their various businesses, these improvements have not been made in any systematic manner, nor in accordance with any definite plan; they would therefore be of no value in any extensive improvement along this frontage and would probably have to be torn down.

We believe the harbor front of the city of Washington should be a model for those of other cities. Instead, it may be described, under its present conditions, as a disgrace to the city. Development within the last year would seem to indicate that if proper wharfage facilities were provided, much river and commercial traffic would be attracted to Washington which now goes elsewhere. As it is, the demand for wharf space can not be met.

One particular feature which the committee has included in its plans is that of a recreation pier, which, if constructed, would afford facilities to the mothers and children of the city of Washington for enjoying the river breezes during the hot summer days and be a valuable adjunct to the playground movement which has become such a matter of popular interest in Washington.

J. R. SUTTON,
W. J. DOUGLAS,
DANIEL E. GARGES,
Wharf Committee.

Maj. WM. V. JUDSON,
Corps of Engineers, U. S. Army,
Engineer Commissioner, District of Columbia.

List of wharf property under lease.

POTOMAC RIVER FRONT.

Name of lessee.	Location.	Expires.	Water front- age.	Area.	Rental per year.
American Ice Co.....	Section 2, structures 54 to 58, 60 to 67, and 78 to 88.	Mar. 15, 1913	<i>Feet.</i> 496	<i>Sq. ft.</i> 102,100	\$2,500
Conrad F. Bennett.....	Section 2, structures 89 to 97.....	.....do.....	54	7,500	200
Brennan Construction Co.	Foot of Thirty-first street.....	Feb. 1, 1918	33	.....	240
Capital Yacht Club.....	Foot of Ninth street sw., between structures 39 and 41.	July. 1, 1910	24	2,080	75
Carter & Clarke.....	Section 2, structures 68 to 77, inclusive, including 70½.	May 1, 1913	280	45,800	a 750
Church & Wimsatt.....	Section 2, structures 34 and 35.....	Mar. 15, 1913	80	18,000	720
Colonial Beach Co.....	Section 1, structures 31, 32, 33, 34, 35, 36, 37.	.....do.....	132	8,000	300
Edward A. Cumberland	Section 2, structures 39 and 40.....	Mar. 15, 1910	40	2,400	70
The J. Maury Dove Co.	Foot of G street.....	Sept. 1, 1909	100	.....	120
G. W. Forsberg.....	Section 2, structures 22 to 33, except 24, and 118, 119, and 120.	Mar. 15, 1913	156	18,000	733
Edward J. Gardner.....	Section 3, structure 21.....	Oct. 1, 1909	20	1,600	75
Independent Steam- boat and Barge Co.	Section 1, structures 26 to 30.....	Oct. 1, 1912	120	7,000	300
J. Harrison Johnson.....	Section 3, structures 12 to 20.....	Mar. 15, 1913	168	38,000	750
Johnson & Wimsatt.....	Section 3, structures 5 to 11.....	.....do.....	190	43,500	900
John Miller.....	Section 3, structures 24 to 27.....	.....do.....	200	26,600	b 300
Mount Vernon and Marshall Hall Steam- boat Co.	Section 1, structures 59, 62, 63, 64.....	.....do.....	125	10,000	600
William Neitzey.....	Section 3, structure 23.....	Mar. 15, 1910	18	1,440	60
Nicholson, Freeman & Martin.	Section 2, structures 36, 37, 38.....	.....do.....	44	3,320	100
Norfolk and Washing- ton Steamboat Co.	Section 1, structures 41 to 49 and 57 to 60.	Mar. 15, 1913	220	20,300	1,200
Do.....	Section 1, structures 60 and 65 to 72.....	Jan. 1, 1912	190	44,000	1,500
Potomac Gunning and Fishing Club.	Section 2, structures 42 and 43.....	Mar. 15, 1910	18	1,000	60
Potomac and Ches- apeake Steamboat Co.	Section 2, structures 11, 12, 14, 15, 16, 17, 17½, 18, 20, 21, 13, 19.	Mar. 15, 1913	198	35,600	810
William A. Ragan.....	Section 3, structure 22.....	Mar. 15, 1910	45	2,600	100
Stephenson Bros.....	Section 2, structures 1 to 10, inclusive.	Feb. 1, 1912	300	59,900	900
Geo. A. Tasker.....	Section 2, structures 41 and south of 41.	Apr. 15, 1910	18	1,148	60
White Oak Coal Co.....	Section 3, structures at foot of Thir- teen- and - a - half street, opposite square southeast of 267.	Mar. 15, 1912	200	35,000	400
District of Columbia, sand wharf.	Section 2, structures 43 to 53, inclusive, and 59 and 61½.	.....	147	24,500	.....
Fish wharf, formerly leased to W. W. Riley, now in litigation.	Section 2, structures 98 to 129, inclu- sive; section 3, structures 1 to 4, in- clusive.	.....	496	117,800	.....
District of Columbia, harbormaster's wharf.	Section 1, structure 38.....	.....	.....	.....	.....
Total.....	.....	.....	.....	.....	14,873

ANACOSTIA RIVER (EASTERN BRANCH).

Harry D. Bailey.....	North side just east of Anacostia Bridge.	Oct. 18, 1909	35	.....	\$30.00
Chas. L. Gummel.....	Water front between building lines of N street se.	June 30, 1910	90	.....	67.50
Capt. Henry Raum.....	Foot First street se.....	(c)	60	.....	60.00
District of Columbia, sewer division.	Opposite lot 1, square south of square 744.	.....	132.2	.....	.....
Peter E. Smith.....	Foot Eleventh street.....	June 30, 1910	30	.....	30.00
Thos. W. Smith.....	Square south of square 744.....	Nov. 5, 1914	132.2	.....	132.00
James T. Summers.....	Water front between building lines of Fourth street se.	June 30, 1910	50	.....	50.00
Miss Kate Tole.....	West side Anacostia Bridge.....	.....do.....	48	.....	48.00
United States, Super- intendent Capitol Building and Grounds.	Foot of First street se., opposite square south of square 744.	.....	40	.....	.....
Total.....	.....	.....	.....	.....	317.50

a Also \$750 in improvements.

b Also \$300 in improvements.

c Monthly.

List of wharf property under lease—Continued.

JAMES CREEK CANAL.

Name of lessee.	Location.	Expires.	Water frontage.	Area.	Rental per year.
			<i>Feet.</i>	<i>Sq. ft.</i>	
Otto P. Andrews.....	Parcel 27.....	Sept. 21, 1909	15		\$7.50
Isaac Applestein.....	Parcel 8.....	June 30, 1910	127		158.75
Carter & Clarke.....	Parcels 5, 7, 11.....	do.....	277		207.75
Eugene Hall.....	Parcel 28.....	do.....	20		10.00
Lewis Jefferson.....	Parcel 9.....	do.....	100		75.00
Layton H. McGhie.....	Parcel 8.....	Nov. 1, 1909	136		170.00
Robert Murphy.....	Parcels 1 and 3.....	June 30, 1910	445		173.50
Urban & Bradley.....	Parcel 13.....	Mar. 15, 1910	125		84.00
Washington Brick and Terra Cotta Co.	Parcels 2 and 10.....	June 30, 1910	570		427.50
Total.....					1,314.00

TOTAL RENTALS.

Potomac River front.....	\$14,873.00
Anacostia River front.....	317.50
James Creek Canal.....	1,314.00
Total.....	16,604.50

REPORT OF THE BOARD FOR THE CONDEMNATION OF INSANITARY BUILDINGS.

WASHINGTON, D. C., *September 3, 1909.*

SIR: We have the honor to submit the following report of the transactions of the board for the condemnation of insanitary buildings for the year ending June 30, 1909:

TABLE NO. 1.—*Number of houses inspected and action taken with respect thereto during the year ending June 30, 1909.*

	Examined.	Demolished.	Repaired.
Alleys.....	79	52	50
Streets.....	349	179	115
Total.....	428	231	165

The discrepancy between the number of houses demolished and repaired and those examined is caused by notices expiring, and repairs and removals being made with respect to houses that were examined during the previous years, and is fully explained in Tables 2, 3, and 4, following.

TABLE NO. 2.—*Number of houses inspected and action taken with respect thereto during the year ending June 30, 1907.*

	Examined.	Demolished.	Repaired.
Alleys.....	175	89	33
Streets.....	274	115	61
Total.....	449	204	94

TABLE No. 3.—*Number of houses inspected and action taken with respect thereto for the year ending June 30, 1908.*

	Examined.	Demolished.	Repaired.
Alleys.....	156	124	64
Streets.....	354	217	66
Total.....	510	341	130

TABLE No. 4.—*Total number of houses acted upon since the creation of the board for the condemnation of insanitary buildings to June 30, 1909.*

	Examined.	Demolished.	Repaired.	Pending.
Alleys.....	410	275	147	79
Streets.....	977	511	242	133
Total.....	1,387	786	389	212

Cases referred to other departments for correction, such as dirty yards, leaky hydrants, defective closets, full box privies, dangerous sheds and buildings or parts of buildings, defective gutters and down spouts, and complaints of a minor character which could be properly corrected under existing regulations, 167.

Total number of meetings of the board for the condemnation of insanitary buildings for fiscal year ending June 30, 1909, 12.

Preliminary notices served.....	332
Condemnation notices served.....	173
Signs affixed to buildings.....	155
Total.....	660

TABLE No. 5.—*Number of tenants required to secure other quarters by reason of buildings being demolished through action on the part of the board for the condemnation of insanitary buildings for the year ending June 30, 1909.*

	Adults.	Children.	Total.
Streets.....	267	135	402
Alleys.....	195	102	297
Total.....	462	295	699

Total number of tenants required to secure other quarters since the creation of the board for the condemnation of insanitary buildings up to the year ending June 30, 1909:

Adults.....	1,446
Children.....	722
Total.....	2,168

TABLE No. 6.—*Number of tenants benefited by repairs to dwellings through action on the part of the board for the condemnation of insanitary buildings for the year ending June 30, 1909.*

	Adults.	Children.	Total.
Streets.....	317	132	449
Alleys.....	118	77	195
Total.....	435	209	644

TABLE NO. 7.—*Total number of tenants benefited by repairs since the creation of the board for the condemnation of insanitary buildings up to the year ending June 30, 1909.*

	Adults.	Children.	Total.
Streets.....	520	404	924
Alleys.....	444	232	676
Total.....	964	636	1,600

Number of inspections made in connection with the examination of buildings, including new work and reinspection work on pending cases.....	2,097
Miscellaneous visits made in connection with the service of notices and in the inspection of buildings, locating addresses, etc.....	907

Total number of visits of a miscellaneous character and inspections made of buildings.....	3,004
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Assessed valuation of improvements removed in alleys during the fiscal year 1909.....	\$7,200.00
Assessed valuation of improvements removed in streets during the fiscal year 1909.....	28,400.00

Total assessed valuation.....	35,600.00
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Rental value per annum of houses removed in alleys during the year ending June 30, 1909.....	4,952.40
Rental value per annum of houses removed in streets for the year ending June 30, 1909.....	11,205.00

Total rents per annum.....	16,157.40
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In calculating the assessed valuation of property demolished, no consideration has been given to the value of the land, which, in all cases greatly exceeds the value of the improvements located thereon. The improvements are taken at the assessed valuation which is supposed to be two-thirds of its actual value.

On account of the refusal of nonresident owners to demolish, it has been necessary for the board to remove one building during the fiscal year 1909, located on a street. In connection with this removal the sum of \$10.50 was collected and deposited with the collector of taxes for refund, upon the proper application by the owners.

No vouchers have been drawn against the appropriation for expenses incident to the removal of any structures as appropriate action has been taken, with the exception above noted, either to repair or to remove after the service of notices.

Ten cases have been referred to the corporation counsel for appropriate action in the police court, with the following results:

Failure of tenant to vacate, personal bonds taken; building vacated and demolished.

Failure of tenant to vacate, case continued; building vacated and demolished.

Failure of owner to demolish, jury trial demanded; case before jury and tried December 15, 1909; owner fined \$10.

Failure of owner to demolish; case continued and building removed.

Failure to demolish; case called and dismissed through imperfect service of notice, attorney alleging insanity on the part of one of the owners.

Failure of owner to demolish three houses; case continued and buildings removed.

Failure of owner to demolish; case continued; building removed.

Failure of owner to demolish; case continued and building removed.

Failure of owner to demolish; case continued; building removed.

Failure of tenant to vacate; case continued; building vacated.

Two cases, involving four houses, are now pending before the supreme court of the District of Columbia, praying that the orders of the board be modified or set aside and it is impossible at the present time to determine the outcome.

Special attention is still being given to structures unprovided with sewer and water connections, with a view to assisting the health department in eliminating box privies by making the owner provide such connection or remove the structures if its condition does not warrant the expense of connecting it with the public sewer and water main.

During the year a great deal of attention has been given to insanitary and unsuitable lunch rooms. Located throughout the city were a great many buildings, such as fuel

sheds and other structures, totally unfit for lunch-room purposes and structurally such that permit to repair could not be issued. Forty-seven structures of this character were vacated or demolished during the year and others were repaired in such a manner as to comply with the health regulations regarding the sale of food, both as to structural condition of the building and the proper sewer and water facilities for keeping the premises clean.

One case has been acted upon during the year, where sewer connections had been made under the compulsory-drainage act. The law provides for the installation of sewer and proper water connection for the closet, but makes no provision for a yard hydrant or other method of obtaining water for domestic use, and hence no hydrant or kitchen sink had been installed. Water-closet facilities only had been provided and in consequence the tenants were forced to seek a public pump or connect a short piece of hose with the yard closet in order to obtain water, and had adopted the latter method. In this instance proper hydrant was installed and the building generally repaired in a satisfactory manner.

Seven hundred and thirty-three of the tenants affected by the removal of buildings were colored and 24 were white. Many of the tenants affected have gone and others are going to the suburbs, both in Maryland, Virginia, and the outlying sections of the District and renting and purchasing cheap homes with fairly large sized lots. Others are renting rooms in other places in the city and not changing their mode of living; while others are renting two-story brick buildings for the use of two families, one taking the upstairs and the other the downstairs and converting the building into two family flats without the necessary conveniences generally found in modern buildings of that character.

In order to determine whether or not there was what might be termed a house famine among the cheaper grade of houses in the District, a canvass was made of the leading real-estate offices during the latter part of June and the early part of July and data gathered in relation to vacant houses at that time. On the lists for rental of 31 representative agents were found 351 brick and frame houses fairly well distributed over the four sections of the city, both in alleys and streets; no consideration being given to houses renting for more than \$16.50 per month. There is, nevertheless, a demand for the cheaper grade of modern houses.

One of the most satisfactory removals during the year was the demolition of premises Nos. 1, 2, 3, 4, 5, and 6 Shepherd alley NW. These 6 three-story brick structures provided living quarters, at the time of inspection, for 50 adults and 25 children, not including the large number of visitors present at all hours of the day and night. The police census, taken in the spring of 1908, about a month before action was taken by the board for the removal of the buildings, showed a total population of 99 in the entire alley. An investigation a short time after the demolition of the buildings showed a total population of 27, and the police census taken in the spring of 1909 shows a population of 44—21 males and 23 females—distributed as follows: Under 5 years, 5; 5 to 21 years, 8; and over 21 years, 31; which shows a material reduction in the population of this alley. This variation is brought about by the shifting character of the tenants, and it is practically impossible to obtain the same figures twice in succession.

The morals of this alley can be fairly well arrived at before the removal of the structures in question by quoting an extract from the report of the commanding officer of the second police precinct, dated July 23, 1908:

"* * * An examination of the records of this station disclosed the fact that since May 4, 1908, out of a total population of 99 persons (as per last police census), 51 arrests for various offenses have been made in this alley, such as disorderly conduct, disorderly houses and assembly, vagrancy, assaults, threats, petit larceny, concealed weapons, crap shooting, and intoxication. The dispositions in these cases have been as follows: Twenty-six convictions, 5 pending, 2 nolle prossed, and 18 dismissed."

Four two-story frame dwellings in Durrs court NW. were also removed, which provided living quarters for 14 adults and 10 children and, with the removal of these four buildings, Durrs court ceases to be an inhabited alley.

Credit is due the owners of the above properties for the assistance rendered the board in the prompt removal of the buildings, and real estate agents and owners generally for compliance with the orders of the board, and also for assistance rendered in cases of unrecorded transfers, failure to locate owners through the directory, and other reasons which rendered the service of notice peculiarly difficult.

The majority of houses located in the alleys at the present time are of such a character structurally that under the present law they are not condemnable, but are kept in repair because of inspections made and notices served from time to time as conditions warrant. In many cases the bad sanitation is caused by neglectful housekeeping and

an idle and vicious mode of living. The board can not insist on the removal of a substantial brick structure that has no abnormal features in construction, and the result is a perpetuation of such structures under improved sanitary conditions but with the moral tone and location in no wise changed.

Bad housekeeping and general neglect is not confined wholly to the alleys. A great many houses located on the streets have been brought to the attention of the board, where, by the proper attention to the ordinary household duties, there would have been no occasion for complaint. The throwing of ashes and rubbish in the back yard instead of placing it in cans for the authorized collectors results in the yard being elevated above the door in such a manner that ventilation under the floor is prevented and water can flow in during rain and snow storms, causing the floors to be damp and soon to rot. The difference in housekeeping conditions can be better noted in rows of houses where one will be found in a clean and generally good condition and the same type of house next door will be filled, both in the yard and rooms, with a general accumulation of rubbish and dirt, with no attempt whatever to keep even within a semblance of cleanliness.

The inauguration during the year of house-to-house inspection by the sanitary inspectors of the health department has resulted in a generally improved condition throughout the city.

The board reiterates the suggestion made in the annual report of 1907 that some provision should be made for a school of housekeeping within which to teach the ignorant how to properly care for themselves and their homes in a practical and economical manner. This would be an absolute benefit both to the occupants and the adjoining residents, and the owner and the various inspectors would have fewer minor complaints requiring attention.

As usual, it has been necessary in certain cases to grant extensions of time for the vacation of the buildings to be demolished; in some instances on account of the poverty of the tenants and their inability to find available houses coming within their means.

The usual examination of building permits for the year shows that a great many permits have been applied for and granted to make repairs and alterations that would have been acted upon by the board had not the owners taken the initiative and made such changes and repairs as were necessary.

Many structures have been demolished that could possibly have been repaired but presumably the owners felt that the expenditure would not be justified.

Numerous unfounded complaints have been investigated, as usual, based both upon neighborhood quarrels and a desire of the tenant for revenge when notice is served to vacate for the nonpayment of rent or disorderly conduct, all of which consume time that might be used to better advantage.

Some provision should be made for transportation for the inspector in the service of the board. At the present time the street cars are used. This is a very unsatisfactory and ineffective method of covering practically 60 square miles composing the District of Columbia. A great deal of time is wasted in walking to and from connections, and long walks and waits are necessary when in the suburban districts. It is necessary to make several inspections of each case, in order to note repairs being made or to see whether or not the building or buildings have been demolished as set forth in the orders of the board. The question of transportation was presented to the Comptroller of the Treasury for a decision, and it was his opinion that none of the money appropriated was available for purposes of transportation under the wording of the act. The board would, therefore, respectfully recommend that the wording of the appropriation be changed to remedy this condition and that a reasonable amount be allowed to provide proper transportation in order to facilitate the operations of the work under the act.

WM. KELLY,
Assistant to Engineer Commissioner, District of Columbia.

WM. C. WOODWARD, M. D.,
Health Officer.

S. ASHFORD,
Inspector of Buildings.

Maj. WM. V. JUDSON,
Corps of Engineers, U. S. Army,
Engineer Commissioner, District of Columbia.

REPORT OF ASSISTANT ENGINEER IN CHARGE OF ROCK CREEK PARK.

WASHINGTON, D. C., August 31, 1909.

SIR: I have the honor to submit the following report of operations in Rock Creek Park during the fiscal year ended June 30, 1909:

Work was continued on the public golf course throughout the year. The grading and seeding of the tees and greens was completed by the chain gang, and the use of that gang then discontinued. Cutting grass on the greens and hauling manure for course was continued by the park force.

Owing to the washing out of a part of Beach driveway and a wooden bridge, just about the upper ford, a new stretch of road about 1,000 feet in length, located on higher ground, was cleared and graded, and a 3-foot concrete culvert about 30 feet long was built, to take the place of the bridge.

A new foot path on high ground was cleared and graded on the east side of Beach drive, from the Zoo to the Military road, and a new bridle path was cut to the Daniels road, at the upper end of the park.

A new floor was placed on the bridge on Beach driveway across Rock Creek at the upper end of the park.

The west and north lines of the park north of Military road were resurveyed and blazed out through the timber, to mark the line for the benefit of the police and employees.

By far the larger part of the appropriation was expended for labor and teams for the care and maintenance of the roads, bridle paths, and open spaces, for sprinkling roads, and for cutting grass. Most of the grass cut was turned over to the water department for feeding the animals of that department.

The following is a statement of the expenditures for the year:

Statement.

Care and improvement of Rock Creek Park, 1908-9, made available in June, 1908.....	\$2,000.00
Amount expended in 1908.....	981.94
Labor pay rolls charged to appropriation for 1908-9.....	1,018.06
	<hr/> 2,000.00 <hr/>
Pay rolls and blacksmithing:	
August 4 to March 18.....	7,736.42
April 3 to July 1.....	3,837.45
	<hr/> 11,573.87 <hr/>
Repayment to be deducted.....	7.50
	<hr/> 11,566.37 <hr/>
Tools.....	49.04
Materials for construction and repair.....	86.03
Concrete culvert (contract work).....	199.80
Stone and screenings, 250 cubic yards.....	346.11
Hauling stone.....	281.93
Disbursing officer.....	60.49
Signs and regulations.....	29.50
Badges.....	3.00
New wheels for water wagon.....	19.00
Repairs to lawn mover.....	5.00
Material for bridge floor (upper bridge over Rock Creek).....	259.88
80 bushels corn, to feed wild fowl.....	69.60
Grass seed.....	9.40
Manure.....	7.00
	<hr/> 12,992.15 <hr/>
Unexpended balance.....	7.85
	<hr/> 13,000.00 <hr/>

It is recommended that the opening of an entrance to the park from Sixteenth street, by way of Piney Branch parkway, be undertaken during the year ending June 30, 1911, and that a new masonry bridge be built on the upper end of Beach driveway. For these purposes and for the construction of additional roads, shelters and paths, and for the ordinary maintenance, the sum of \$25,000 can be profitably expended in 1911.

Respectfully submitted.

L. R. GRABILL,
Assistant Engineer.

Maj. WM. V. JUDSON,
*Corps of Engineers, U. S. Army,
Engineer Commissioner, District of Columbia.*

REPORT OF THE SUPERINTENDENT OF THE DISTRICT BUILDING.

WASHINGTON, August 10, 1909.

GENTLEMEN: We have the honor to report that the maintenance of the District Building for the fiscal year ending June 30, 1909, has been accomplished satisfactorily, we believe, to the occupants of the building. This was made possible, however, by the willingness of the force to attend to business without regard to hours. No annual leave whatever was granted during the year, and whenever an employee was absent on account of sickness, or other unavoidable reason, it was necessary to increase the hours of duty of the other employees of the same class.

The increase granted by Congress for the current fiscal year has helped to improve the service, but a still further increase in the engine and boiler room force should be made in order that the service may not suffer by the absence, through sickness or other unavoidable reason, of any of the members of that force. The present appropriation provides for 3 firemen and 3 coal passers, each having eight hours duty in twenty-four. It will be seen that the absence of either a fireman or coal passer necessitates working the remaining two 50 per cent overtime, and, considering the nature of their work, this is particularly undesirable. The increased force recommended in our estimate for the coming fiscal year is the minimum that should be employed to produce economical and satisfactory results.

By practicing strict economy in the regular work we have been able to make a number of extensions not provided for in the appropriation for the construction of the building; among others, painting the corridors, stairways, and large public offices of the assessor, collector of taxes, and disbursing officer; the installation of metal weather strips at window openings on the north, east, and west fronts of the building, and Venetian blinds at all office windows, except on the north front.

The details of expenditures are shown in the auditor's report of the appropriation for the maintenance of the building.

Very respectfully,

WM. KELLY,
Captain, Corps of Engineers, U. S. Army.

E. M. MARKHAM,
*Captain, Corps of Engineers, U. S. Army,
Jointly, Superintendent of the District Building.*

THE COMMISSIONERS DISTRICT OF COLUMBIA.

APPENDIX.

SPECIFICATIONS FOR PAVING STREETS AND AVENUES WITH SHEET ASPHALT.

1. *Work.*—The work to be done under this contract will consist of paving with sheet asphalt such streets, avenues, and roads in the District of Columbia, or parts thereof, or doing any portion of such work, as may be ordered in writing by the Commissioners of the District of Columbia, under appropriations for the fiscal year ending June 30, 1910. The estimated amount is 38,500 square yards of asphalt surface and 3,000 square yards of vitrified block gutter. These amounts are approximations only and may be considerably varied from; but they will be used in canvassing bids and the award will be based thereon, and will be made to the lowest acceptable bidder for all the work scheduled. The commissioners especially reserve the right to regulate the time and order of executing work ordered under this contract as may appear most advantageous to the interests of the District.

2. *Bids.*—The contractor will, for the prices bid, do all the work prescribed in these specifications, do all the necessary grading and trimming of the roadbed and all rolling; provide bridges, fences, and other means of maintaining travel on intersecting streets, roads, and railroads and all private driveways after giving due notice to the parties affected thereby; maintain the same in good and safe condition as long as may be necessary, and then remove such temporary expedients and restore such roads to their proper condition; provide watchmen, red lights, fences, and other precautionary measures necessary to the protection of persons and property; furnish all materials (except as specified) and all tools and implements, labor and transportation required to lay and put in complete order for use the specified pavement, and do each and all of these to the satisfaction of the engineer. Upon the completion of the work he will remove any temporary structures erected during the progress of the work, and restore all fixtures, pavements, and parkings, both public and private, to satisfactory condition.

3. *Grading and subgrade.*—The area over which the pavement is to be laid must be excavated to the proper depth below the surface of the pavement when completed, any objectionable or unsuitable matter below the bed being removed to such depth as may be directed by the engineer and the space filled with good gravel or other acceptable material, compactly rolled and rammed. The bed, after being trimmed so as to be parallel to the surface of the pavement when completed, will be thoroughly compacted by rolling, with a roller weighing not less than 5 tons and by heavy ramming at places which can not be reached by the roller, dampening the bed before rolling and ramming, if required, to the satisfaction of the engineer. No extra allowance will be made for trimming or rolling, but the volume of earth, etc., removed will be paid for as grading of its class.

4. *Concrete base.*—Upon the bed thus prepared there will be laid a 6-inch foundation of concrete as directed, made of the following materials by volume—1 part Portland cement, 3 parts sand, and 7 parts gravel.

5. *Cement.*—The cement used shall conform to the current specifications for supplying cement of its kind to the engineer department of the District of Columbia. No cement shall be used upon the work until it has been tested in the office of the engineer commissioner and accepted by him, the tests to extend over such length of time, not exceeding twenty-eight days, as the engineer commissioner may think necessary. The cement while in storage or upon the work, or while being hauled upon the work, shall be properly protected, and no cement shall be used which, in the opinion of the engineer commissioner, has been injured by age or exposure. The cement shall be kept by the contractor in store, under proper cover, in the city of Washington, subject to inspection for at least ten days after notifying the inspector of asphalt and cements, before it can be used on the streets, and if deemed advisable by the engineer commissioner, twenty-eight days. Should the contractor's work be delayed by his failure to keep himself supplied with the necessary amount of approved cement, the District shall have the right to furnish him with tested cement from the stocks on hand at its warehouse and charge said contractor with the cost

of same at the rate of \$2.50 per barrel of Portland cement for each and every barrel so furnished, and collect the amount due therefor from any moneys found to be due to said contractor by the District.

6. *Sand*.—The sand used shall be clean, sharp river, or pit sand, containing both fine and coarse grains, but free from sewage, mud, clay, mica, paper, leaves, and other foreign matter and not showing when shaken with water and after subsidence more than 5 per cent, by volume, of silt.

7. *Gravel*.—Gravel shall be clean, washed gravel, and shall not contain pebbles greater than 1½ inches in their largest dimensions.

8. *Water*.—Water used for mortar and concrete shall be fresh and clean, free from earth, dirt, or sewage, and shall be used in such quantity as the engineer may direct.

9. *Platforms*.—Platforms shall be provided upon which all sand, gravel, and broken stone for concrete shall be placed when brought upon the line of the work, and kept there until used.

10. *Mixing*.—The thorough mixing and incorporation of all materials will be insisted upon. If done by hand labor the dry cement and sand shall be turned over and mixed with shovels by skilled workmen not less than six times before the water is added; the stone after being drenched with water shall be added to the mixed sand and cement; the drenching shall not be done while the stone or gravel is in the wheelbarrow; the whole mass shall be thoroughly turned over, with shovels, not less than four times, and mixed upon a water-tight platform until every particle of stone is completely enveloped with mortar. The whole operation of mixing and laying each batch shall be performed as expeditiously as possible, by the aid of machinery or a sufficient number of skilled men. If the concrete is mixed in batches requiring 1 barrel of cement, the platform must not be smaller than 10 by 12 feet, nor will a larger amount of concrete than can be made with 1 barrel of cement be allowed to be mixed in one batch by hand. In mixing by machinery the materials must be so delivered as to insure a uniform product of the specified proportions of all ingredients to the satisfaction of the engineer commissioner.

11. *Setting*.—Concrete shall not be used after it has begun to show evidence of setting. No concrete which has once set shall be used as material for mixing a new batch.

Each batch of concrete after being mixed shall be spread in place in horizontal layers so as to give the requisite thickness after being tamped, and shall then be thoroughly compacted. Any evidence of lack of compaction will be regarded as sufficient reason for removal and replacement of the base. The base must be watered each twenty-four hours, either by rain or artificially, until covered with binder or seven days old. Hauling over base less than three days old must not be allowed unless planks are laid.

12. *Binder*.—The binder course shall be composed of clean, broken stone, equal in quality to the stone for the base, and passing an inch and a quarter screen. Eighty-five per cent of this shall pass said screen in its longest dimensions, and of the remaining 15 per cent no piece shall have a larger dimension than 1½ inches, and the stone, after passing the heating drums, shall not contain less than 5 nor more than 15 per cent of material passing a No. 10 screen.

The stone will be heated not higher than 350° F., in suitable appliances. It is then to be thoroughly mixed by machinery with asphalt cement, such as is acceptable for surface cement, penetration 60 to 90, at such temperature and in such proportions that the resulting binder will have life and gloss without an excess of cement. Should it appear dull from overheating or lack of cement, it will be rejected. While hot it will be hauled upon the work, spread upon the base so that when compacted it will be at least 1½ inches in thickness, and immediately rammed and rolled until it is cold. Should the resulting course not show a proper bond, it shall be immediately removed and replaced by the contractor. Binder and top shall not be taken from the yard to the site of the work when weather conditions are, in the judgment of the engineer, unsuitable for the work of laying the pavement.

The contractor shall not enter upon a concrete base in order to lay the binder course until it has obtained sufficient strength for such a purpose, and during the period between laying the base and binder he shall properly protect it, and, when ordered by the engineer commissioner, shall sprinkle it in warm weather between the hours of sunset and sunrise as often as may be deemed necessary, and in cold weather cover it with a material suitable for its protection.

13. *Asphalt wearing surface*.—The wearing surface of the pavement shall be composed of asphalt cement; clean, sharp grained sand; fine absorbent mineral dust.

14. *Asphalt cement*.—The asphaltic cement must be practically free from water, and must be within the range of 40 and 70 penetration when tested at 77° F. The amount of penetration to be fixed by the engineer commissioner.

Preference will be given to an asphaltic cement that is not readily affected by the action of water, provided it is satisfactory in other respects. If an asphaltic cement is accepted that is affected by water, some provision satisfactory to the engineer commissioner must be made to guard against the results of such action, and such work must be included in the price bid.

If an asphalt has been proposed for use by the contractor and approved by the engineer commissioner, no change in the asphalt to be used shall be made unless with the approval of the engineer commissioner. If an asphalt is submitted for use which has not been successfully used for a period of at least two years for paving under conditions similar to those existing in the District of Columbia, its use may be limited to such extent as may be deemed advisable, or it may be rejected for use entirely in the discretion of the engineer commissioner.

The bitumen of the asphaltic cement must comply with the following tests:

1. It must be of such a character that if when tested at 32° F. it shows a hardness of 10 penetration, it must not when tested at 115° F. be softer than 350 penetration.

2. When a briquette of the pure bitumen, having a minimum cross section of 1 square centimeter, is tested for ductility at 77° F., the bitumen must stretch 15 centimeters before breaking.

3. When the bitumen is heated in an open tin at a temperature of 300° F. for eighteen hours in a hot-air oven it must not show a loss by volatilization of over 5 per cent and must not have been hardened over 50 per cent by this heating.

The asphaltic cement must never be heated to a temperature that will injure it.

When the asphaltic cement contains over 5 per cent of material that will separate by subsidence while in a molten condition it must be thoroughly agitated before drawing from storage and while in use in the supply kettles so as to insure a uniform cement.

These properties shall be determined by tests made by uniform methods, descriptions of which are on file in the office of the engineer commissioner.

15. *Sand*.—The sand in use shall be hard grained and moderately sharp. On sifting it should have at least 15 per cent of material that would be caught on a 40-mesh per inch screen, 25 per cent of material that will pass an 80-mesh to the inch screen, 10 per cent of which at least must pass a 100-mesh to the inch screen. If the sand to be used does not contain the desired fine material, mineral dust can be added to make up the deficiency, and in any case at least 5 per cent of such mineral dust shall be used. The amount of fine material may be diminished on streets of light traffic when approved by the engineer commissioner.

16. *Mineral dust*.—This shall be any fine, hydraulic cement or limestone dust, the whole of which shall pass a 30-mesh screen, and at least 85 per cent pass a 100-mesh screen.

17. *Asphalt paving mixture*.—The materials complying with the above specifications shall be mixed in proportion by weight, depending upon their character, and the traffic on the street, and upon the character of the asphalt, and will be determined by the engineer commissioner; but the percentage of bitumen in any mixture soluble in carbon bisulphide shall not exceed the limits, 9 to 13 per cent. If the proportions of the mixture are varied in any manner from those specified, the mixture will be condemned; its use will not be permitted; and, if already placed on the streets, it will be removed and replaced by proper materials at the expense of the contractor.

The sand, or the mixture of sand and mineral dust, and the asphaltic cement, will be heated separately to about 300° F. The dust, if limestone, will be mixed while cold with the hot sand in the required proportions and then mixed with the asphaltic cement at the required temperature, and in the proper proportion in a suitable apparatus, so as to effect a thoroughly homogeneous mixture. Sand boxes and asphalt gauges will be weighed in the presence of inspectors as often as may be desired.

Samples of all material entering into the composition of the pavement shall be supplied by the inspector of asphalt and cements when required, in suitable tin boxes and cans, and he shall have access to all branches of the works at any time.

The pavement mixture prepared in the manner thus indicated will be brought to the ground in carts at a temperature of not less than 250° or more than 350° F., and if the temperature of the air is less than 60° F. the contractor must provide canvas covers for use in transit. It will then be thoroughly spread to a thickness of at least 2½ inches by means of hot iron rakes in such manner as to give uniform and regular grade, so that after having received its ultimate compression it will have a net thickness of at least 1½ inches. This depth will be constantly tested by means of gauge-furnished by the engineer commissioner. The surface will then be compressed by hand rollers, after which a small amount of hydraulic cement will be swept over it and it will then be thoroughly compressed by a steam roller weighing not less than 175 pounds to the inch, the rolling being continued for not less than five hours for every 1,000 yards of surface.

18. *Asphalt base.*—In resurfacing work where the depth of binder would be excessive, an asphaltic or coal-tar base, as directed, will be first laid. It will be composed of clean, broken stone, free from spalls, that will pass through a 3-inch ring, well rammed, and rolled with a steam roller weighing not less than 5 tons. The rolling will be continued until the stone ceases to creep before the roller, and until it is evident that the final compression has been reached. It will then be thoroughly coated with asphaltic paving cement or coal tar of approved quality, as directed.

19. *Hauling and grading.*—(a) The old material from the streets will be hauled to the nearest property yard or to such other point as the engineer commissioner may direct. (b) Lines and grades will be established by the engineer commissioner, and no work will be commenced until these are given. (c) Contractors are to be responsible for the proper preservation of all stakes, etc., set by the engineer for the determination of line or grade; should any such be disturbed through carelessness the cost of replacing same will be charged against the contractor at a fixed price of \$2 for each point, to be deducted from any money found due at final settlement. (d) All material excavated, of whatsoever nature, is the property of the District, and will be disposed of as the engineer commissioner shall direct. (e) The filling will be done in layers not exceeding 12 inches in thickness, and all material used for this purpose will be subject to approval. If improper or unsuitable material be used, it will be removed at the cost of the contractor. (f) All measurements will be made in place, and payments made thereon. (g) Should the grading involve work in both "cut" and "fill," the measurement of it will be computed on the basis of the volume of the material in place in the "cut" only; the excavated earth from the "cut" section, deposited in the "fill," will not be again paid for as "fill." Should the amount of cut on the street not suffice to make the necessary fill, the amount borrowed from other designated localities will be paid for as grading.

20. *Laying vitrified block.*—Vitrified-block gutters will ordinarily be about 18 inches wide, laid on a concrete base 6 inches in depth, of the same material and proportions and laid in the same manner as prescribed in these specifications for the concrete base under asphalt pavements.

As soon as practicable after the concrete base has been laid, a dry mixture, composed of four parts of the sand specified in paragraph 6 and one part of Portland cement, thoroughly mixed, will be spread thereon, as a bed for the paving blocks, to the depth of not less than one-half inch, and regulated so as to be exactly parallel to the finished grade of the gutter. On the bed prepared for them, the blocks will be set on edge, with the longest dimensions at right angles to the curb, as directed by the engineer.

The longitudinal joints of each course of blocks laid must be broken by a lap of not less than 4 inches.

The blocks will then be carefully rammed by placing a plank over several courses and ramming the plank with a heavy hammer. The ramming will be continued until the blocks reach a firm, unyielding bed and present a uniform surface, with proper grade. Any lack of uniformity in the surface or defect in the grade must be corrected by taking up and relaying the blocks.

After proper ramming, the entire gutter will be thoroughly grouted with a thin, easily flowing grout, of neat natural cement.

A similar construction of block to that described for the gutters may be used adjacent to railroad tracks; the base will in that case extend to the bottom of the cross-ties, or be at least 6 inches thick.

The blocks will be furnished the contractor at the District property yards, and must be hauled to the work at his expense.

ADDITIONAL WORK.

21. The following specifications will cover incidental work which may be required of the contractor:

22. *Setting 6 by 20 inch granite and bluestone curb.*—This curb will be set in the following manner: A trench parallel to the curb line, having a depth of 24 inches below the top of the curb, when set, and 20 inches wide, will be excavated to receive the curb and its gravel bed; the dimensions of the trench, in width, will be 14 inches from the curb line toward the building line of the street, and 6 inches from said curb line toward the center line of the street. In this trench thus prepared the curb will be set, and brought to line and grade, with plumb face. Spalls, of stone, hard-burned brick, or other acceptable substance, prepared for the purpose, will be used to adjust the stone to grade, and these spalls will be so placed and adjusted as to support the curbing permanently, and afford a firm and stable support for it, without the use of small chips and fragments, used as "shimming" pieces, to wedge the stone in place. After the stone has been properly placed, and adjusted to line and grade,

the trench will be filled with gravel of approved quality to within 8 inches of the top of the curb; the filling to be done in layers of not more than 3 inches in depth, and thoroughly compacted by suitable ramming. Close contact joints and even surfaces must be made, and the lines and grades furnished strictly followed,

23. *Setting 8 by 8 inch granite curb.*—This curb will be set in the following manner: A trench parallel to the curb line, having a depth of 15 inches below the top of the curb when set, and 18 inches wide, will be excavated to receive the concrete and the curb. The dimensions of the trench in width will be 14 inches from the curb-line toward the building and 4 inches from the curb line toward the center line of the street. In the trench thus prepared a bed of concrete will be laid, filling the trench to a depth of 5 inches, composed of one part of Portland cement, four parts of clean concrete sand, and ten parts of screened pebbles, the material to be mixed and laid under the same conditions as prescribed for laying cement concrete base for sheet asphalt pavements. On the base prepared and laid as above, the curb will be placed before the concrete has set, and adjusted to line and grade by setting it to a firm, unyielding bearing in a bed of freshly made concrete, by the use of heavy wooden mauls. The face of the curb must be plumb and true to line, and the top of it carefully set to grade with close and even contact joints. After the stone has been set to line and grade, the trench on the foot-walk side will be immediately filled with concrete to within 5 inches of the top of the curb, which will be thoroughly rammed and compacted, after which it will immediately be covered with earth to prevent injury to it through too rapid evaporation, etc. In case vitrified block gutters are to be laid in front of the curb, any portion of the concrete base of the curb that would interfere with the laying of block must be removed immediately after the curb has been set.

24. *Resetting 6 by 20 inch granite and bluestone curb.*—The work to be done under this classification is identical with that specified for setting curb, except no hauling of the curb is required other than that incidental to the necessary disposition of it upon the line of the work. Under this classification, also, the curb may be adjusted to line and grade without removing it from its trench, if so ordered by the engineer.

25. *Resetting 8 by 8 inch granite curb.*—The work to be done under this classification is identical with that specified for setting this class of curb, except that no hauling of the curb is required other than that incidental to the disposition of it in the work, and no new concrete is required other than that sufficient to imbed the stone and back it, and adjust it to the line and grade.

26. *General instructions.*—All curb will be furnished to the contractor at the District property yard, and will be hauled by him to the site of the work; any curbing unaccounted for, or improperly disposed of, or damaged, or broken, through careless or unskilled handling, will be charged against him and the value of the loss to the District will be deducted from any amount due the contractor for work done, as determined by the engineer.

All expenses connected with or incidental to the work of setting or resetting curb, as described above, including the hauling of the curbing, preparing the curb trenches, and the necessary grading connected therewith, furnishing gravel and spalls, furnishing and placing concrete and all other material and labor necessary to execute the work in accordance with the specifications therefor, are included in the fixed price for the respective items as hereinafter stated; the cost of dressing, joining, or cutting the curb will be paid for additionally, but no other claim for additional compensation will be entertained.

Should the adjoining brick foot walks be disturbed in order to set or reset the curb, the portion so disturbed shall be repaved, if required by the engineer, without cost to the District.

27. *Additional work.*—Contractors must do such additional work incident to the construction of new pavements as may be ordered on each street by the engineer commissioner. All such work shall be in accordance with current District specifications. Prices paid for this work will be as stated below:

- (1) Removing old curb, including haul not to exceed 2 miles, 8 cents per linear foot.
- (2) Hauling same beyond distance of 2 miles, 1 cent per linear foot per mile.
- (3) Removing old rubble, cobble, flagging, stone and brick, asphalt block, etc., including haul, not to exceed 1 mile, 15 cents per square yard.
- (4) Removing old granite block, including haul, not to exceed 1 mile, and removal of old paving bed and cleaning concrete base where same exists, 25 cents per square yard.
- (5) Hauling same beyond distance of 1 mile, 1 cent per square yard per quarter mile or fraction thereof.
- (6) Grading and hauling earth, not to exceed 1,000 feet, 45 cents per cubic yard.
- (7) Grading and hauling macadam, not to exceed 1,000 feet, 55 cents per cubic yard.

(8) Removing old coal-tar and bituminous pavement or base and hauling, not to exceed 1,000 feet, 85 cents per cubic yard.

(9) Removing old concrete base and hauling, not to exceed 1,000 feet, \$1.50 per cubic yard.

(10) Hauling excavated material, per 100 feet, over first 1,000 feet, three-quarters of a cent per cubic yard.

(11) Hauling from District property yard and setting 6 by 20 inch curb, 20 cents per linear foot.*

(12) Hauling from District property yard and setting 8 by 8 inch curb, 35 cents per linear foot.

(13) Resetting 6 by 20 inch bluestone curb, 20 cents per linear foot.

(14) Resetting 8 by 8 inch curb on old concrete base, 15 cents per linear foot.

(15) Relaying vitrified brick or block on old concrete base, 60 cents per square yard.

(16) Laying asphaltic or bituminous broken stone base in place, \$3 per cubic yard.

(17) Laying and relaying asphalt and vitrified blocks on gravel base, 40 cents per square yard.

(18) Adjusting manhole tops and basin covers to grade, \$2 each.

(19) Laying and relaying granite blocks, 75 cents per square yard.

(20) Portland-cement concrete base as specified herein, \$6 per cubic yard.

(21) Relaying cobble and rubble, 30 cents per square yard.

(22) Dressing, jointing, and cutting curb, etc. (stonecutters' time), including setting-up labor, 65 cents per hour.

(23) Repairing cement walks, \$1.70 per square yard.

(24) Repairing brick sidewalks, 25 cents per square yard.

(25) Adjusting electric-light manholes to grade, as follows:

(a) Size 14 by 14 inches, 75 cents each.

(b) Size 18 by 15 inches, \$1 each.

(c) Size 36 by 26 inches, \$1.50 each.

(d) Size 6 by 6 feet, \$4 each.

(26) Resetting 8 by 8 inch curb on new concrete base, 31 cents per linear foot.

(27) Laying asphalt surface, 44 cents per cubic foot.

(28) Laying standard asphalt surface, 2½ inches thick before compression, 60 cents per square yard.

(29) Laying asphalt binder, 25 cents per cubic foot.

(30) Cleaning old vitrified blocks for relaying, 40 cents per square yard.

28. *Bond*.—Good and sufficient bond in the penal sum of 25 per cent of the estimated amount of the contract, with sureties or a surety company satisfactory to the commissioners, will be required from all contractors, guaranteeing that their contract will be faithfully performed; that the contractor or contractors will be responsible for all claims for damages to persons, property, or premises arising out of his or their operations prior to the acceptance of the finished work, and that he or they will promptly make payments to all persons supplying him or them with labor or materials in the prosecution of the work provided for in the contract.

29. *Guaranty*.—All work under this contract will be guaranteed and kept in repair by the contractor without cost to the District for a period of five years from date of its acceptance by the commissioners. This date shall be the same as that of the final voucher. Ten per cent of the cost of this work will be retained and disposed of as otherwise provided for herein.

It is further expressly understood and agreed that if any of the pavements laid should, for any reason whatsoever, within the period of five years, prove inferior to the best laid in the District prior to July 1, 1904, then the contractor shall, on demand of the commissioners, remove such defective pavements and relay them with new material of approved quality, and in accordance with these specifications. The engineer commissioner shall decide the question of inferiority.

On expiration of guaranty for maintenance the work is to be inspected, and all imperfections, depressions, and unevenness of surface, alignment and grade of curbs, sidewalks, etc., must be corrected where and to such extent as the engineer commissioner shall direct, upon which the engineer commissioner will accept the same in writing, and until such acceptance the guaranty shall be in force. Repairs that may become necessary during the guaranty period will be made by the contractor when ordered by the engineer.

30. *Retain fund*.—The retain fund shall be subject to the control of the Commissioners of the District of Columbia for the purpose of maintaining the work in repair and making good any defects discovered during the period specified. In the event of the contractor failing to make such necessary repairs after notice to do so the commissioners may cause such work to be done and deduct the cost of the same from the retain fund, and, in their discretion, may require of the contractor and his sureties

that any portion of the said retain fund which may have been expended for the maintenance of the work shall be made good by further deposit.

31. *Site of work.*—The bidder is expected to examine the site of the work before bidding, as no allowance will be made for any unusual difficulties which may arise, either affecting the original construction or maintenance of the finished work.

32. Certificates of indebtedness against street railway companies will be given to the contractor for all work done and all materials furnished by him for the space which must be paved and kept in repair at the expense of said companies in accordance with existing laws.

33. Contractors shall be responsible for any work done upon any street over plumbers' cuts or other work done by permission of the commissioners before the work is begun.

34. The commissioners reserve the right to modify these specifications as may from time to time seem desirable. The amount of compensation, if any, due the contractor for said modifications will be determined by the engineer commissioner on the same basis as in case of extra work.

SPECIFICATIONS FOR PAVING STREETS AND AVENUES WITH ASPHALT BLOCK.

1. *Work.*—The work to be done under this contract will consist of paving with asphalt block such streets, avenues, and roads in the District of Columbia, or parts thereof, or doing such portion of such work, as may be ordered in writing by the Commissioners of the District of Columbia, under appropriations for the fiscal year ending June 30, 1910. The estimated amount is 15,000 square yards.

2. *Bids.*—The contractor will, for the prices bid, do all the work prescribed in these specifications, do all the necessary grading and trimming of the roadbed and all rolling; provide bridges, fences, and other means of maintaining travel on intersecting streets, roads, and railroads and all private driveways after giving due notice to the parties affected thereby; maintain the same in good and safe condition as long as may be necessary, and then remove such temporary expedients and restore such roads to their proper condition; provide watchmen, red lights, fences, and other precautionary measures necessary to the protection of persons and property; furnish all materials (except as specified) and all tools and implements, labor and transportation required to lay and put in complete order for use the specified pavement, and do each and all of these to the satisfaction of the engineer. Upon the completion of the work he will remove any temporary structures erected during the progress of the work, and restore all fixtures, pavements, and parkings, both public and private, to satisfactory condition.

3. *Asphaltic blocks.*—(a) The size of the blocks will be 5 by 4 by 12 inches for gravel base and 3 by 4 by 12 or 3 by 5 by 12 for concrete base, and a variation of one-fourth of an inch from these dimensions will be sufficient ground for rejecting any block.

(b) All bids must be accompanied by a specimen block of the size and quality described in these specifications, labeled with the name of the bidder and locality of the factory. Bids not accompanied by specimen blocks will not be accepted. The blocks will be tested for specific gravity; all blocks furnished must be equal in quality to the sample, as determined by the engineer commissioner.

(c) The blocks will be composed of asphaltic cement, mineral dust, and crushed stone.

4. *Asphaltic cement.*—The asphaltic cement must be practically free from water, and shall not at any time reach a temperature high enough to injure it.

If an asphalt is accepted that is readily affected by water some provision satisfactory to the engineer commissioner must be made to guard against the results of such action, and such work must be included in the price bid.

The asphaltic cement must comply with the following requirements and must in any case be subject to the approval of the engineer commissioner.

(1) For the purpose of testing the asphaltic cement its composition shall be so regulated by the addition, if necessary, of standard fine absorbent mineral dust that it will contain 50 per cent of bitumen soluble in carbon bisulphide. This cement must be so tough at 32° F. that prism 1 centimeter square by 8 centimeters long between supports will not break under impact at center with less than 15-centimeter drop of 25-gram weight.

(2) This cement must not be softer than 60 penetration when tested at 115° F.

(3) When this cement is heated in an open tin at a temperature of 300° F. for eighteen hours in a hot-air oven it must not show a loss by volatilization of over 3 per cent, and it must not be hardened over 50 per cent by this heating.

4. The asphaltic cement must be thoroughly agitated before drawing from storage and while in use in the supply kettles so as to insure a uniform cement.

These tests shall be made by uniform methods, descriptions of which are on file in the office of the engineer commissioner.

5. *Mineral dust.*—This shall be any fine, absorbent, inorganic dust not acted on by water, the whole of which shall pass a 30-mesh screen, and at least 85 per cent pass a 100-mesh screen.

6. *Crushed stone.*—The crushed stone in use shall be from any tough, hard rock, and shall not contain any appreciable amount of soft ingredients, such as mica, soft sandstone, or shale. On sifting not more than 3 per cent shall be retained on a 3-mesh per inch screen, at least 40 per cent must be retained on 20-mesh per inch screen, and at least 12 per cent must pass a 100-mesh per inch screen. If the stone does not contain the desired fine material, mineral dust can be added to make up the deficiency, and in any case at least 5 per cent of such mineral dust shall be used.

7. *Asphaltic-block mixture.*—The materials complying with the above specifications shall be mixed in proportions by weight, depending upon their character, which will be determined by the engineer commissioner, but in any mixture the percentage of bitumen soluble in carbon bisulphide shall not exceed the limits, 6 to 9 per cent.

If the proportions of the mixture are varied in any manner from those prescribed the blocks will not be accepted.

The stone and dust and the asphaltic cement must be mixed while hot, and the mixture must be compressed into blocks by methods meeting with the approval of the engineer commissioner.

Samples of all material entering into the composition of the pavement shall be supplied to the inspector of asphalt and cements, when required, in suitable tin boxes and cans, and he shall have access to all branches of the works at all times.

Blocks for 4-inch pavement are to be manufactured with a total minimum compression of not less than 360,000 pounds per block, press pressure. Those for 5-inch pavement are to be manufactured with a total minimum compression of not less than 240,000 pounds per block, press pressure.

8. *Grading and subgrade.*—The space over which the pavement is to be laid having been excavated to the proper depth below the surface of the pavement when completed, any objectionable or unsuitable matter below the bed will be wholly removed and the space filled with good gravel or other acceptable material, compactly rolled or rammed. The bed will then be trimmed so as to be parallel to the surface of the pavement when completed and the entire roadbed will then be thoroughly compacted by rolling a roller weighing at least 10 tons, or by thorough ramming at places which can not be reached by the roller. No extra allowance will be made for trimming and rolling, but the volume of earth, etc., removed will be paid for as grading of its class.

ASPHALT-BLOCK PAVEMENT ON GRAVEL BASE.

9. *Gravel base.*—Upon this bed, as above, is to be laid a base of good bank gravel, or other approved material, to be screened from all pebbles measuring more than 1½ inches in their largest dimensions, so as to be 5 inches thick when thoroughly compacted. The gravel will then be thoroughly compacted by rolling with a roller weighing at least 10 tons or by heavy ramming at places which can not be reached by the roller. The rolling will be continued until the gravel base cracks under the roller without compressing further. Upon this will be placed a layer of fine, sharp sand, washed and dried, 2 inches in thickness, to serve as a bed for the blocks, which will be laid directly upon and imbedded in it with close joints. Special care will be observed to make the surface of this bed of sand exactly parallel to the surface of the pavement when completed. Should the material found in the space to be occupied by the gravel bed be approved by the engineer for such use, it may be left in place and used as such bed after being satisfactorily trimmed and compacted.

Any material removed from the street in grading that is suitable may, with the approval of the engineer, be used in place of the gravel base if not needed for public use.

10. *Method of laying blocks.*—The asphalt blocks are to be laid on the bed of sand at right angles to the line of the street, and with such crown as the engineer commissioner may direct; each course to be of blocks of a uniform width and depth, and so laid that all longitudinal joints shall be broken by a lap of at least 4 inches. In laying the blocks the pavers must stand or kneel upon the blocks already laid and not upon the bed of sand. Each course of blocks will be driven against the course preceding it by a heavy maul, in order to make the lateral joints as tight as possible, and the longitudinal joints will be closed by pressing each course in the direction of its length by a lever. When thus laid the blocks will be immediately covered with clean, fine sand, entirely free from any loam or earthy matter, perfectly dry, and screened through a sieve having not less than 20 meshes to the inch. This will be

swept or raked into the joints and the blocks will then be carefully rammed by placing a plank or iron plate over several courses and ramming it with a heavy rammer. The ramming will be continued until the blocks reach a firm, unyielding bed and present a uniform surface, with proper grade and crown. Any lack of uniformity in the surface must be corrected by taking up and relaying the blocks. When the ramming is complete a sufficient amount of fine, dry sand, as above described, will be spread over the surface.

ASPHALT-BLOCK PAVEMENT ON CONCRETE BASE.

11. *Concrete base.*—The space over which the pavement is laid will be excavated to the proper depth below the surface of the finished pavement, and trimmed, filled, and rolled as described for gravel base. Upon this bed will be laid a base of concrete 5 inches thick when compacted, and made of the following materials by volume: One part Portland cement, 3 parts sand, and 7 parts gravel.

12. *Cement.*—The cement used shall conform to the current specifications for supplying cement of its kind to the engineer department of the District of Columbia. No cement shall be used upon the work until it has been tested in the office of the engineer commissioner and accepted by him, the tests to extend over such length of time, not exceeding twenty-eight days, as the engineer commissioner may think necessary. The cement while in storage or upon the work, or while being hauled upon the work, shall be properly protected, and no cement shall be used which, in the opinion of the engineer commissioner, has been injured by age or exposure. The cement shall be kept by the contractor in store, under proper cover, in the city of Washington, subject to inspection for at least ten days after notifying the inspector of asphalt and cements, before it can be used on the streets, and if deemed advisable by the engineer commissioner, twenty-eight days. Should the contractor's work be delayed by his failure to keep himself supplied with the necessary amount of approved cement, the District shall have the right to furnish him with tested cement from the stocks on hand at its warehouse and charge said contractor with the cost of same at the rate of \$2.50 per barrel of Portland cement for each and every barrel so furnished, and collect the amount due therefor from any moneys found to be due to said contractor by the District.

13. *Sand.*—The sand used shall be clean, sharp river sand, containing both fine and coarse grains, but free from sewage, mud, clay, mica, paper, leaves, chips, and other foreign matter and not showing when shaken with water and after subsidence more than 5 per cent, by volume, of silt.

14. *Gravel.*—Gravel shall be clean, washed gravel, and shall not contain pebbles greater than 1½ inches in their largest dimensions.

15. *Water.*—Water used for mortar and concrete shall be fresh and clean, free from earth, dirt, or sewage, and shall be used in such quantity as the engineer may direct.

16. *Platforms.*—Platforms shall be provided upon which all sand, gravel, and broken stone for concrete shall be placed when brought upon the line of the work, and kept there until used.

17. *Mixing.*—The thorough mixing and incorporation of all materials will be insisted upon. If done by hand labor the dry cement and sand shall be turned over and mixed with shovels by skilled workmen not less than six times before the water is added; the stone after being drenched with water shall be added to the mixed sand and cement; the drenching shall not be done while the stone or gravel is in the wheelbarrow; the whole mass shall be thoroughly turned over, with shovels, not less than four times, and mixed upon a water-tight platform until every particle of stone is completely enveloped with mortar. The whole operation of mixing and laying each batch shall be performed as expeditiously as possible, by the aid of machinery or a sufficient number of skilled men. If the concrete is mixed in batches requiring one barrel of cement, the platform must not be smaller than 10 by 12 feet, nor will a larger amount of concrete than can be made with one barrel of cement be allowed to be mixed in one batch by hand. In mixing by machinery the materials must be so delivered as to insure a uniform product of the specified proportions of all ingredients to the satisfaction of the engineer commissioner.

18. *Setting.*—Concrete shall not be used after it has begun to show evidence of setting. No concrete which has once set shall be used as material for mixing a new batch.

Each batch of concrete after being mixed shall be spread in place in horizontal layers so as to give the requisite thickness after being tamped, and shall then be thoroughly compacted. Any evidence of lack of compaction will be regarded as sufficient reason for removal and replacement of the base.

19. *Method of laying blocks.*—The 3-inch blocks are to be laid on this concrete base in a paving bed of mortar, made of 1 part Portland cement and 4 parts sand, at least one-half inch thick, and as much thicker as may be necessary, due to inequalities in

surface of concrete base, so that the blocks, when tamped in place, will be securely embedded in the mortar and wholly supported by it, and will present a uniform surface with close joints and proper grade and crown. The pavement will then be thoroughly grouted with a thin easily flowing grout of neat Portland cement.

20. *Hauling and grading.*—(a) The old material from the streets will be hauled to the nearest property yard or to such other point as the engineer commissioner may direct.

(b) Lines and grades will be established by the engineer commissioner, and no work will be commenced until these are given.

(c) Contractors are to be responsible for the proper preservation of all stakes, etc., set by the engineer for the determination of line or grade; should any such be disturbed through carelessness the cost of replacing same will be charged against the contractor at a fixed price of \$2 for each point, to be deducted from any money found due at final settlement.

(d) All material excavated, of whatsoever nature, is the property of the District, and will be disposed of as the engineer commissioner shall direct.

(e) The filling will be done in layers not exceeding 12 inches in thickness, and all material used for this purpose will be subject to approval. If improper or unsuitable material be used, it will be removed at the cost of the contractor.

(f) All measurements will be made in place, and payments made thereon.

(g) Should the grading involve work in both "cut" and "fill," the measurement of it will be computed on the basis of the volume of the material in place in the "cut" only; the excavated material from the "cut" deposited in the "fill," will not be again paid for as "fill." Should the amount of cut on the street not suffice to make the necessary fill, the amount borrowed from other designated localities will be paid for as grading.

21. *Setting and resetting curb.*—Setting 6 by 20 inch granite and bluestone curb:

This curb will be set in the following manner: A trench parallel to the curb line, having a depth of 24 inches below the top of the curb, when set, and 20 inches wide, will be excavated to receive the curb and its gravel bed; the dimensions of the trench, in width, will be 14 inches from the curb line toward the building line of the street, and 6 inches from said curb line toward the center line of the street. In this trench thus prepared the curb will be set, and brought to line and grade, with plumb face. Spalls, of stone, hard-burned brick, or other acceptable substance, prepared for the purpose, will be used to adjust the stone to grade, and these spalls will be so placed and adjusted as to support the curbing permanently, and afford a firm and stable support for it, without the use of small chips and fragments, used as "shimming" pieces, to wedge the stone in place. After the stone has been properly placed, and adjusted to line and grade, the trench will be filled with gravel of approved quality, to within 8 inches of the top of the curb; the filling to be done in layers of not more than 3 inches in depth, and thoroughly compacted by suitable ramming. Close contact joints and even surfaces must be made, and the lines and grades furnished strictly followed.

22. *Setting 8 by 8 inch granite curb.*—This curb will be set in the following manner: A trench parallel to the curb line, having a depth of 15 inches below the top of the curb when set, and 18 inches wide, will be excavated to receive the concrete and the curb. The dimensions of the trench in width will be 14 inches from the curb line toward the building and 4 inches from the curb line toward the center line of the street. In the trench thus prepared a bed of concrete will be laid filling the trench to a depth of 5 inches, composed of 1 part of Portland cement, 4 parts of clean concrete sand, and 10 parts of screened pebbles, the material to be mixed and laid under the same conditions as prescribed for laying cement concrete base under current specifications for sheet asphalt pavements. On the base prepared and laid as above, the curb will be placed before the concrete has set, and adjusted to line and grade by setting it to a firm unyielding bearing in a bed of freshly made concrete, by the use of heavy wooden mauls. The face of the curb must be plumb and true to line, and the top of it carefully set to grade with close and even contact joints. After the stone has been set to line and grade, the trench on the footwalk side will be immediately filled with concrete to within 5 inches of the top of the curb, which will be thoroughly rammed and compacted, after which it will immediately be covered with earth to prevent injury to it through too rapid evaporation, etc. Any portion of the concrete base of the curb that would interfere with the laying of block must be removed immediately after the curb has been set.

23. *Resetting 6 by 20 inch granite and bluestone curb.*—The work to be done under this classification is identical with that specified for setting curb, except no hauling of the curb is required other than the incidental to the necessary disposition of it upon the line of the work. Under this classification, also, the curb may be adjusted to line and grade without removing it from its trench, if so ordered by the engineer.

24. *Resetting 8 by 8 inch granite curb.*—The work to be done under this classification is identical with that specified for setting this class of curb, except that no hauling of the curb is required other than that incidental to the disposition of it in the work, and no new concrete is required other than that sufficient to imbed the stone and back it, and adjust it to the line and grade.

25. *General instructions.*—All curb will be furnished to the contractor at the District property yard, and will be hauled by him to the site of the work; any curbing unaccounted for, or improperly disposed of, or damaged, or broken, through careless or unskilled handling, will be charged against him and the value of the loss to the District will be deducted from any amount due the contractor for work done, as determined by the engineer.

All expenses connected with or incidental to the work of setting or resetting curb, as described above, including the hauling of the curbing, preparing the curb trenches, and the necessary grading connected therewith, furnishing gravel and spalls, furnishing and placing concrete and all other material and labor necessary to execute the work in accordance with the specifications therefor, are included in the fixed price for the respective items as hereinafter stated; the cost of dressing, joining, or cutting the curb will be paid for additionally, but no other claim for additional compensation will be entertained.

Should the adjoining brick footwalks be disturbed in order to set or reset the curb, the portion so disturbed shall be repaved, if required by the engineer, without cost to the District.

26. *Additional work.*—Contractors must do such additional work incident to the construction of new pavements as may be ordered on each street by the Engineer Commissioner. Prices paid for this work will be as stated below:

- (1) Removing old curb, including haul not to exceed 2 miles, 8 cents per linear foot.
- (2) Hauling same beyond distance of 2 miles, 1 cent per linear foot per mile.
- (3) Removing old rubble, cobble, flagging, stone and brick, asphalt block, etc., including haul, not to exceed 1 mile, 15 cents per square yard.
- (4) Removing old granite block, including haul, not to exceed 1 mile, 25 cents per square yard.
- (5) Hauling same beyond distance of 1 mile, 1 cent per square yard per quarter mile or fraction thereof.
- (6) Grading and hauling earth, not to exceed 1,000 feet, 45 cents per cubic yard.
- (7) Grading and hauling macadam, not to exceed 1,000 feet, 55 cents per cubic yard.
- (8) Removing old cold-tar and bituminous pavement or base and hauling, not to exceed 1,000 feet, 85 cents per cubic yard.
- (9) Removing old concrete base and hauling, not to exceed 1,000 feet, \$1.50 cents per cubic yard.
- (10) Hauling excavated material, per 100 feet, over first 1,000 feet, three-quarters of a cent per cubic yard.
- (11) Hauling from District property yard and setting 6 by 20 inch curb, 20 cents per linear foot.
- (12) Hauling from District property yard and setting 8 by 8 inch curb, 35 cents per linear foot.
- (13) Resetting 6 by 20 inch blue stone curb, 20 cents per linear foot.
- (14) Resetting 8 by 8 inch curb on old concrete base, 15 cents per linear foot.
- (15) Relaying vitrified brick or block on old concrete base, 60 cents per square yard.
- (16) Laying asphaltic or bituminous broken stone base in place, \$3 per cubic yard.
- (17) Laying and relaying asphalt and vitrified blocks on gravel base, 40 cents per square yard.
- (18) Adjusting manhole tops and basin covers to grade, \$2 each.
- (19) Laying and relaying granite blocks, 75 cents per square yard.
- (20) Portland cement concrete base as specified herein, \$6 per cubic yard.
- (21) Relaying cobble and rubble, 30 cents per square yard.
- (22) Dressing, jointing, and cutting curb, etc. (stonecutter's time), including setting-up labor, 65 cents per hour.
- (23) Repairing cement walks, \$1.70 per square yard.
- (24) Repairing brick sidewalks, 25 cents per square yard.
- (25) Laying vitrified brick or block on 6-inch concrete base as specified, \$1.30 per square yard.
- (26) Adjusting electric-light manholes to grade, as follows:
 - (a) Size 14 by 14 inches, 75 cents per square yard.
 - (b) Size 18 by 15 inches, \$1 each.
 - (c) Size 36 by 26 inches, \$1.50 cents each.
 - (d) Size 6 by 6 feet, \$4 each.
- (27) Resetting 8 by 8 inch curb on new concrete base, 31 cents per linear foot.

(28) Cleaning old vitrified blocks for relaying, 40 cents per square yard.

29. *Bond*.—Good and sufficient bond in the penal sum of 25 per cent of the estimated amount of the contract, with sureties or a surety company satisfactory to the commissioners, will be required from all contractors, guaranteeing that their contract will be faithfully performed; that the contractor or contractors will be responsible for all claims for damages to persons, property, or premises arising out of his or their operations prior to the acceptance of the finished work, and that he or they will promptly make payments to all persons supplying him or them with labor or materials in the prosecution of the work provided for in the contract.

30. *Guaranty*.—All work under this contract will be guaranteed and kept in repair by the contractor without cost to the District for a period of five years from date of its acceptance by the commissioners. This date shall be the same as that of the final voucher. Ten per centum of the cost of this work will be retained and disposed of as provided for by law.

It is further expressly understood and agreed that if any of the pavements laid should, for any reason whatsoever, within the period of five years, prove inferior to the best laid in the District prior to July 1, 1904, then the contractor shall, on demand of the commissioners, remove such defective pavements and relay them with new material of approved quality. The engineer commissioner shall decide the question of inferiority.

On expiration of guaranty for maintenance the work is to be inspected, and all imperfections must be corrected where and to such extent as the engineer shall direct, upon which the engineer will accept the same in writing, and until such acceptance the guaranty shall be in force. Repairs that may become necessary during the guaranty period will be made by the contractor when ordered by the engineer.

31. *Retain fund*.—The retain fund shall be subject to the control of the commissioners of the District of Columbia for the purpose of maintaining the work in repair and making good any defects discovered during the period specified. In the event of the contractor failing to make such necessary repairs after notice to do so the commissioners may cause such work to be done and deduct the cost of the same from the retain fund, and, in their discretion, may require of the contractor and his sureties that any portion of the said retain fund which may have been expended for the maintenance of the work shall be made good by further deposit.

32. *Site of work*.—The bidder is expected to examine the site of work before bidding, as no allowance will be made for any unusual difficulties which may arise, either affecting the original construction or maintenance of the finished work.

33. *Cuts*.—Contractors shall be responsible for any work done upon any street over plumbers' cuts or other work done by the permission of the commissioners before the work is begun.

34. Certificates of indebtedness against street railway companies will be given to the contractor for all work done and all materials furnished by him for the space which must be paved and kept in repair at the expense of said companies in accordance with existing laws.

35. The commissioners reserve the right to modify these specifications as may from time to time seem desirable. The amount of compensation, if any, due the contractor for said modifications will be determined by the engineer commissioner on the same basis as in case of extra work.

SPECIFICATIONS FOR LAYING CEMENT SIDEWALKS.

1. *Classes "A" and "B."*—Work under class "A" will consist of all large work located on streets, avenues, places, etc., within the limits of the city of Washington (including Georgetown or West Washington), and all work on streets, avenues, places, etc., beyond said limits where the roadways are paved. Work under class "B" will consist of all large work located on streets, avenues, places, etc., outside the limits of the city of Washington, as above, where the roadways are not paved, and of all small work wherever located. For classification for purposes of payment under this contract any item of work which exceeds 100 square yards will be rated and paid for as "large work," items of 100 square yards or less being rated as "small work." The aggregate of the item will be the determining consideration, since it may consist of two or more detached pieces in same vicinity. Any question as to classification under this paragraph will be decided by the engineer commissioner.

2. *Grading*.—The contractor is to make such cutting and filling as may be necessary to bring the foundation, when compacted, to the level of 5 inches below the surface of the finished pavement. Grading, either cut or fill, to the needed depth, not exceeding 1 foot on the average for each separate piece of work, and including the area of

tree spaces, either continuous or interrupted, must be done without additional or extra charge, inclusive of removal and haul to designated property yard of all sidewalk material between the curb line and the back of the new work, except that of cement or asphalt, whether the old sidewalk is wholly replaced by the new cement part or not.

Grading in excess of the 1 foot average depth and removal of old cement or asphalt sidewalk will be paid for as additional work at prices stated herein.

Material for filling must be suitable for the purpose, and satisfactory to the engineer, and must be placed in layers and compacted for making good foundation, as required by him.

In case of excavation, any unsuitable or objectionable material in the bed, as determined by the engineer, is to be wholly removed and the spaces filled with broken stone or other suitable material satisfactory to him.

The contractor is to trim the bed so as to make it parallel to the surface of the finished pavement and thoroughly compact the bed by rolling or ramming without extra pay.

On the bed thus prepared will be laid, after compacting, 4 inches of cement concrete and 1 inch of cement mortar, covered by a thin, dry surface coat, all made of the materials and in the manner hereafter described.

3. *Cement*.—The cement used will be a standard brand of Portland cement, uninjured by age or exposure, and delivered at the work in original undamaged packages. The cement shall conform to the current specifications for supplying Portland cement to the engineer department of the District of Columbia. The contractor shall keep the cement in store, under proper cover, in the city of Washington, and shall properly protect it until used. The engineer shall have the right to test the cement as he judges necessary and to reject any or all lots.

4. *Sand*.—The sand used shall be clean and sharp, from fine to coarse, free from sewage, mud, clay, mica, paper, leaves, chips, and other foreign matter, but may show when shaken with water and after subsidence not more than 3 per cent by volume of silt or loam. Sand used for surface layer must be screened on line of work; screen to be used for this purpose to be designated by the engineer. Sand stored at the work shall, when required, be dumped on boards or other suitable platform and kept as clean as when delivered.

5. *Gravel*.—The gravel shall be from small to medium size and as good in quality as the best Potomac River washed gravel. The gravel shall be free from dust, dirt, chips, leaves, and other foreign or objectionable matter, and when required shall be dumped on boards and cared for as provided for sand in the preceding paragraph.

6. *Mortar and concrete*.—The mortar shall be composed of the cement and sand in the proportion of one to two, by volume, thoroughly mixed dry; a sufficient quantity of water will be added afterwards by fine sprinkling to form, upon remixing, a stiff plastic paste. The proportions are intended to secure a mortar in which every particle of sand is enveloped by cement and all voids in the gravel filled with mortar, and this result must be obtained to the satisfaction of the engineer. If the mixing be by hand, it shall be done on a water-tight platform with tight raised edges, and the cement spread first. No batch shall contain more than 1 barrel of cement.

The mixing shall be done by the use of shovels, hoes, and rakes until a thoroughly uniform mortar of proper consistency as above described is secured.

7. *Concrete*.—To the mortar, made as above directed, shall be added five parts by volume of the specified gravel which shall have been thoroughly drenched with water just before it is added to the mortar. The drenching shall not be done in the barrow, nor otherwise to permit the addition of free water to the mortar. Each batch of concrete shall be thoroughly mixed until each piece of gravel is wholly coated with mortar and in a manner satisfactory to the engineer. If the mixing be by hand, it shall be done on a water-tight platform, with tight raised edges, and in the mixing the gravel shall be first spread over the mortar. The concrete immediately after mixing will be spread upon the foundation so that the mortar shall remain evenly incorporated with the gravel, and then thoroughly compacted by ramming. The slab or flag divisions are then to be marked off to the size and markings cut 3 inches deep. The space made by the cutting tool shall be immediately filled with dry sand and well rammed. Should the contractor so desire he will be permitted to substitute broken stone for the gravel used in concrete. Such stone should be hard, durable, and properly broken to a size small enough to pass through a ring 2 inches in diameter and may be the run of the crusher, containing not over 1 per cent of material passing a No. 70 sieve. It shall be free from foreign substances as provided for gravel.

8. *Mortar and surface*.—Mortar for the surface layer shall be made of the specified cement and sand, mixed in the manner as for mortar for concrete, but in the proportion of two or three by volume. The mortar shall be spread while fresh upon the concrete

base while the latter is still soft and adhesive, and before it shall have reached its first set, in such quantity that after thorough manipulation it shall be 1 inch in thickness. It is then to be leveled off and beaten with wooden battens, so as to break any air cells, and make the surfacing perfectly solid and at the true grade. No pavement marked by sand which has been spread over it for protection will be accepted.

9. *Dry coat.*—A coating of dry cement and fine sand in equal proportions, by volume, and such part and kind of coloring matter as the engineer may direct, thoroughly mixed, is then to be floated into the layer; and by a skillful use of tools the surface is to be made smooth and ready for the markings of the slabs; the markings will be made to a depth of one-half inch and immediately over those made in the concrete. The slabs are then to be brought to true lines and grades, and, except at about inch margins, rolled with a toothed roller to make a surface that will not be slippery.

Any lack of compaction between the concrete and mortar layers shall be sufficient reason for requiring entire removal and the substitution of new and satisfactory work.

10. *Protection of work.*—The pavement is to be kept moist, protected against the weather and guarded against foot travel until it has set. Care shall be taken at all times not to interfere with business or travel more than is absolutely necessary for faithful execution of the work. Free ingress and egress from the street to entrances to premises fronting on the sidewalk shall be provided for at all times; and during the time that travel is closed the contractor shall provide a temporary walk and keep it in good condition, safe for pedestrians and easy of access from adjoining walks or roadways. The contractor will not be allowed to obstruct private driveways or approaches, or to dig up or occupy the streets by material more than is absolutely necessary for the prosecution of the work. Special care will be taken to inconvenience the public as little as possible. The contractor will be held responsible for all injury done to the work in any way until it has been accepted and measured by the engineer.

11. *Driveways.*—Driveways shall be laid the same as sidewalks, except that the surface shall be divided into small squares as in K street NW., near Connecticut avenue. The plan of driveways shall be as directed by the engineer.

12. *Tree spaces.*—Tree spaces will be left as directed. These spaces and also other edges of the work not abutting against curb, poles, or straight lines of parking, terrace, or coping, will be outlined by planed boards of sound pine, 5 inches deep, set on edge to true line, and with top edge even with the pavement surface.

The edges of the new pavement not joining a curb or coping are to be clearly cut down on a true line 1 inch below the finished surface. The edges adjacent to interrupted tree spaces are to be plaster finished. The area of the tree space, either continuous or interrupted, is to be filled with earth up to the level of the pavement.

13. *Plumbing.*—All preliminary plumbing work will be done by the District. The contractor will be held responsible for all plumbing appurtenances within the limits of the finished sidewalk being at its grade, and for any damage or obstructions thereto due to his operation.

14. *Cleaning work.*—Before acceptance of the work it will be cleaned and all débris and unused material removed. No crumbling or uneven edges of the sidewalk will be allowed to remain. Pine strips at edges of concrete will not be removed before forty-eight hours after the pavement is laid.

15. *Inspection of work.*—The engineer will appoint an inspector to see that each piece of work, including curb work, is graded and laid according to specifications and directions. The District will not pay for any work done during the absence of the inspector.

16. *Additional work.*—Contractors must do such additional work incident to the construction of new pavements as may be ordered on each street by the engineer commissioner. All such work shall be in accordance with current District specifications. Prices paid for this work will be as stated below:

Removing old curb, including haul to property yard, 8 cents per linear foot.

Hauling same beyond distance to nearest property yard, 1 cent per linear foot per mile.

Removing old rubble, cobble, flagging, stone and brick, asphalt block, etc., including haul to the property yard, 15 cents per square yard.

Removing old granite block, including haul to property yard, 25 cents per square yard.

Hauling same beyond distance to nearest property yard, 1 cent per square yard per quarter mile or fraction thereof.

Grading or hauling earth, not to exceed 1,000 feet, 45 cents per cubic yard.

Grading and hauling macadam, not to exceed 1,000 feet, 55 cents per cubic yard.

Removing old coal-tar and bituminous base and hauling not to exceed 1,000 feet, 85 cents per cubic yard.

Removing old asphalt and cement sidewalk pavement and hauling not to exceed 1,000 feet, 85 cents per cubic yard.

Removing old concrete base and hauling not to exceed 1,000 feet, \$1.50 per cubic yard.

Hauling excavated material, per 100 feet, over first 1,000 feet, three-fourths of a cent per cubic yard.

Hauling from District property yard and setting bluestone and 6 by 20 inch curb, class "A," 20 cents per linear foot.

Hauling from District property yard and setting bluestone and 6 by 20 inch curb, class "B," 23 cents per linear foot.

Hauling from District property yard and setting 8 by 8 inch curb, class "A," 32 cents per linear foot.

Hauling from District property yard and setting 8 by 8 inch curb, class "B," 35 cents per linear foot.

Resetting 6 by 20 inch bluestone curb, 20 cents per linear foot.

Resetting 8 by 8 inch curb on old concrete base, 15 cents per linear foot.

Relaying vitrified brick or block on old concrete base, 60 cents per square yard.

Laying asphaltic or bituminous broken stone base in place, \$3 per cubic yard.

Laying and relaying asphalt and vitrified block on gravel base, 40 cents per square yard.

Adjusting manhole tops and basin covers to grade, \$2 each.

Laying and relaying granite block, 75 cents per square yard.

Portland cement concrete base, as specified herein, \$6 per cubic yard.

Relaying cobble and rubble, 30 cents per square yard.

Dressing, joining, and cutting curb, etc. (stonecutters' time), including setting-up labor, 65 cents per hour.

Repairing brick sidewalks, 25 cents per square yard.

Adjusting electric-light manholes to grade, as follows:

(a) Size, 14 by 14 inches, 75 cents each.

(b) Size, 18 by 15 inches, \$1 each.

(c) Size, 36 by 26 inches, \$1.50 each.

(d) Size, 6 by 6 feet, \$4 each.

Resetting 8 by 8 inch curb on new concrete base, including removal of old concrete base, 31 cents per linear foot.

Repairing cuts, etc., in cement walks when specifically ordered in writing under this paragraph, \$1.70 per square yard.

The last item of additional work consists in all necessary repairs to cuts in cement walks made by individuals, corporations, or by employees or agents of the District of Columbia when such repairs are specifically ordered to be made in writing. Such repairs are to be made within fifteen days after receipt of such written notice, in strict conformity with the within specifications. The payment therefor will be made monthly and no retent will be held on this class of work. The last three years' experience shows an annual aggregate of about 3,500 square yards of such cuts. Failure on the part of the contractor to make any such repair within fifteen days may be authority for the execution of all subsequent work of this class by the District of Columbia, and any excess cost above the contract rate thereby resulting will be charged against the contractor and deducted from any money due or to become due him.

The repaving of all roadway pavements necessarily disturbed in setting or resetting curb will be done by the District without cost to the contractor.

The setting and resetting of the curb shall be done according to current District of Columbia specifications for such work.

All additional or extra work not herein specified is to be paid for at current contract rates for work of a similar character, or if the extra work should be of a class which no rate is fixed by current contracts at actual reasonable cost of labor and materials, plus 15 per cent.

The old curb may be removed and reset to grade and line, or the old curb may be straightened and leveled without removing it from place, as required by the engineer.

17. Existing brick walks abutting the ends of new cement walks are to be relaid, if necessary, without cost to the District, in such manner as to make them conform to the grade, etc., of the new walks in a manner satisfactory to the engineer.

18. *Amount of work.*—The work to be done under this contract consists in laying cement sidewalks in such places and in such order as may be directed by the commissioners under appropriations for the fiscal year 1910. The amount of work to be done under this contract can not be stated with any precision, but as an indication of what is anticipated the amount of the contractor's bond will be determined on the basis of 70,000 square yards. No guaranty is given that the quantity here stated will be equalled or may not be exceeded. The bids will be classified and award of contract based on 60,000 square yards of class "A" and 10,000 square yards of class "B."

19. *Bond.*—Good and sufficient bond in a penal sum which shall in no case be less than one-quarter of the estimated amount of the contract, with sureties or a surety

company satisfactory to the commissioners, will be required from all contractors, guaranteeing that their contract will be faithfully performed; that the contractor or contractors will be responsible for all claims for damages to persons, property, or premises arising out of his or their operations prior to the acceptance of the finished work, and that he or they will promptly make payments to all persons supplying him or them with labor and materials in the prosecution of the work provided for in the contract.

20. *Payment.*—Payments will be made monthly, provided the progress of the work is satisfactory, less 10 per cent of each estimate to be withheld until final payment; but 10 per cent of the cost of the work will be retained and invested as herein provided.

21. *Guaranty.*—All work under this contract will be guaranteed and kept in repair by the contractor without cost to the District for a period of five years from the date of its acceptance by the commissioners. This date shall be the same as that of the final voucher. Ten per cent of the cost of this work will be retained and disposed of as provided for by law.

On expiration of guaranty for maintenance, the work is to be inspected, and all imperfections must be corrected where and to such extent as the engineer shall direct, upon which the engineer will accept the same in writing, and until such acceptance the guaranty shall be in force.

22. *Retain fund.*—The retain fund shall be subject to the control of the Commissioners of the District of Columbia for the purposes provided by law and for the purpose of maintaining the work in repair and making good any defects discovered during the period specified. In the event of the contractor failing to make such necessary repairs after notice to do so the commissioners may cause such work to be done and deduct the cost of the same from the retain fund, and, in their discretion, may require the contractor and his sureties that any portion of the said retain fund which may have been expended for the maintenance of the work shall be made good by further deposit.

23. *Cuts.*—Contractors shall be responsible for any work done upon any street over plumbers' cuts or other work done by the permission of the commissioners before the work is begun.

The commissioners reserve the right to modify these specifications as may from time to time seem desirable. The amount of compensation, if any, due the contractor for said modifications will be determined by the engineer commissioner on the same basis as in the case of extra work.

SPECIFICATIONS FOR CONSTRUCTION OF SEWERS.

1. *Description and location of work.*—

2. *Bids.*—The contractor shall, for the price or prices bid, do all the work prescribed in these specifications; make the requisite excavations for building the sewer and the appertaining structures and connections; shall do all ditching, diking, pumping, bailing, and draining, all sheeting, bracing, and shoring; shall make all provisions necessary to maintain and protect adjacent buildings, fences, trees, gas pipes, water courses, conduits, culverts, sewers, railways, electric lines and other structures, and shall repair all damages to the same which may result from his operations; shall provide all bridges, fences, or other means of maintaining and protecting travel on intercepted streets, roads, and railroads, and on streets or roads in which the trenches are excavated, after giving due notice to parties affected thereby; shall maintain the same in good and safe condition so long as may be necessary, and shall then remove such temporary expedients and restore such ways to their proper condition; shall provide watchmen, red lights, fences, and all other precautionary measures necessary to the protection of persons and property; shall provide all necessary centers, molds, and forms; shall construct all foundations, all brick, concrete, stone, and timber work; shall set in place all ironwork, and refill all trenches; shall furnish all materials (except those specially mentioned in par. 5), and all tools, implements, labor, and transportation required to build and put the sewer in complete working order; and shall do each and all to the satisfaction of the engineer.

For lumber left in trench no payment shall be allowed, unless the same shall be specifically directed by the engineer prior to the refilling of the trench. The contractor ordinarily will use his judgment about leaving bracing lumber in place, but shall be, in all cases, responsible for any injury which may result to the sewer or to adjacent pavements, structures, water, gas, or other conduits by the removal of bracing, sheeting, or shoring.

3. *Drawings.*—The drawings which illustrate the work to be performed and which show the location, shapes, dimensions, and materials of the sewer to be constructed are on the file in the engineer department. All work executed under this contract must conform with these drawings.

Should the position of pipes and other underground objects be found to differ from that indicated on the drawings, or if it shall be found necessary to modify the lines, grades, or positions, the contractor shall have no claim for extra compensation on that account.

4. *Street occupancy and traffic.*—The operations of the sewer contractor must be so conducted that traffic upon steam and street railways and ordinary street traffic may be maintained. All material excavated must be removed from the street or deposited as back-filling upon completed work.

5. *Materials.*—The contractor will be furnished at the District property yards with all the necessary sewer pipes, manhole steps, and ordinary cast-iron manhole tops, with covers, the value of which material, actually used in the work, will not be charged against him. He will also be furnished at the District yards with all the cements, vitrified bricks, and invert blocks required for the work, the value of which will be charged against him at the following rates: Portland cement, \$1.50 per barrel; invert brick, \$18 per 1,000; vitrified invert blocks, 50 cents per linear foot.

Should cement be furnished in bags, the bags will be returned by the contractor or charged against him at the rate of 11 cents each.

The contractor shall convey materials from the points where they are delivered by the commissioners, and store the same in the vicinity of the works. He shall be responsible for the loss incurred, or damage done, to said materials from the time of their delivery until the work is accepted. No materials shall be applied to other use than that for which they are issued.

The materials from the trenches and those used in constructing the sewer appurtenances shall be so deposited as not to hinder nor endanger public travel, and so that free access may be had at all times to all fireplugs, water gates, manholes, and catch basins in the vicinity of the work.

6. *Samples.*—The bricks used upon the work must be equal in quality to the sample bricks in the office of the superintendent of sewers.

7. *Order.*—The work shall be prosecuted in such order as the engineer shall direct. He shall determine whether the conditions are favorable for working, and may suspend the work or any portion of it whenever, in his opinion, the conditions are such as will not insure first-class construction.

8. *Measurement.*—Measurements of work shall be made as follows:

Length: The length of sewer paid for by length, and the length of excavation shall be the whole length of the completed sewer without deduction for the space occupied by manholes.

Width: The width of the trench at any cross section shall be considered as equal to the greatest horizontal diameter of the sewer at that cross section, including the walls thereof, with 9 inches added thereto.

Depth: The depth at any cross section shall be considered as equal to the mean depth from the surface to the outside bottom of the sewer at that section.

In submitting proposals bidders will be guided by the profiles given upon the drawings. These are approximate and any variance therefrom shall not be the basis of any claim for compensation above that provided for in the contract rates.

9. *Foremen.*—The contractor shall employ capable superintendents or foremen to represent him on the work, and they shall receive and obey orders from the engineer.

10. *Mechanics.*—The foremen, mechanics, and others employed by the contractor shall be skilled in the several parts which are given them to do.

11. *Obstacles.*—The prices bid to include the cost of the removal of and delay or damages occasioned by trees, roots, timber, or masonry structures, or other obstacles (whether shown on the plans or not) except rock.

12. *Pavements.*—All pavements disturbed in doing sewer work for the width of the trenches, and defined in section 8 of these specifications, will be relaid by the commissioners. The contractor shall, without cost to the District, haul all cobble, rubble, bricks, blocks, and tiles taken up by him to a property yard to be designated by the engineer, and take receipt therefor. Macadam, hydraulic base, and sheet pavement material removed shall be piled in suitable places along the line of the work so as not to cause unnecessary obstruction of any kind, and during the progress of the work shall be guarded by the contractor against misappropriation. Whenever so ordered by the engineer the contractor shall haul this material to a property yard to be designated by the engineer. No paving material of any kind removed in making excavation shall be used or appropriated by the contractor without written permission from the engineer.

If any pavement be injured by the contractor outside the limits prescribed by the trenches, the cost of restoring such excess shall be charged against him and deducted from any amount found due him. He will maintain the surface over the line of the trench up to the street grade, with the best material obtainable from the excavation,

until such time as the pavement is relaid. The cost of subsequent repairs of all pavements relaid over or adjacent to sewer trenches on account of sewer work, or of any work made necessary, within the period of one year, for which the sewer and their appurtenances are guaranteed, by settlement of the back filling of the trenches will be charged against the 10 per cent retained and invested as provided in paragraph 9 of the instruction to bidders.

13. *Private property.*—Care shall be taken not to move, without the consent of the person owning or controlling them, any trees, fences, water or gas pipes, sewers, drains, conduits, poles or wires for electrical purposes, railways, or other structures, and in crossing or working near them they shall be sustained securely in place until the work is completed, and shall be so treated as to render their condition as efficient and permanent as before.

In sewer construction along a right of way through public or private property the contractor shall so conduct his work as not to damage said property, and so as to interfere with its ordinary use as little as possible; he shall, upon completion of the sewer, restore the surface as nearly as possible to the condition in which he found it. No material shall be used or removed from the premises without the consent of the owner or responsible party in charge of the property.

14. *Trenches.*—The ground shall be excavated in open trenches to such width and depth as may be necessary for proper sewer construction. If, however, in the judgment of the engineer commissioner, it is deemed advisable, special permission may be given for the construction of portions of the work in tunnel, in which case excavation will be allowed as if construction were in open trench. But at any time during such construction the engineer commissioner may direct the excavation to be made in open trench.

The utmost care shall be taken to spare the roots of shade trees, and to protect trees and shrubbery in public parks adjacent to line of work from injury. Also care must be taken to avoid unnecessary damages to park surfaces and roadways during construction.

Whenever it is necessary to intercept work near, or in any way interfere with any public or house sewer, drain, pipe, catch-basin, culvert, or other similar structure, the contractor shall maintain the same working order, and shall repair and make good any damage done to or by any of them during the progress of the work.

During construction, permission may be secured to substitute for any sewer in use which is affected by the work hereby contracted for, a drain upon an approved location of equal capacity and of substantial construction, subject in all particulars to the approval of the engineer commissioner.

The portion of the trench below the springing line of the sewer shall be excavated to conform to the external form and dimensions of the same. If the character of the ground met with in excavating is such that the external form of the sewer can not be preserved, the excavation shall be made to conform as nearly as possible to the external shape and dimensions of the sewer, and the space between the external sewer lines and the bottom and sides of the excavation as made, for a width equal to the outside horizontal diameter of the sewer at the springing line, shall be filled with hydraulic cements, concrete, or brick masonry, as directed.

15. *Rock.*—Only such ledge or rock as in the opinion of the engineer requires blasting for its removal, or bowlders of one-half cubic yard or more in volume which are removed from the trench, will be estimated as rock excavation. Before beginning rock excavation the contractor must procure a written order from the engineer. All excavated material shall be considered and classed as ordinary excavation, except rock removed by special orders as above. Indurated gravel, loose or disintegrated rock, and materials of like character, in the opinion of the engineer commissioner, will not be classed as rock.

For rock excavated from trench \$3 per cubic yard will be allowed the contractor, and excavation classed as rock will not be included also as ordinary excavation.

16. *Blasting.*—Before blasting the contractor must procure a written order from the engineer.

Blasts shall be covered with heavy timbers chained together. Caps or other explosives shall in no case be kept in the same place in which dynamite or other explosives are stored; and, in general, the precaution against accidents from blasting shall be entirely satisfactory to the engineer. The contractor shall be liable for all damages to persons or property caused by blasts or explosives.

17. *Foundations.*—If the material found in the sewer trench be, in the opinion of the engineer, unsuitable for a foundation, upon receipt of a written order it shall be removed by the contractor to such depth and width as may be directed, and suitable material shall be deposited in its place. This additional excavation and deposited material will be paid for as extra work.

18. *Connections.*—Connections with existing sewers shall be made by the contractor according to directions given by the engineer. The right to permit the connection of any public or house sewer with a sewer under construction before completion of the latter is expressly reserved to the commissioners.

19. *Water-tight work.*—Water-tight work is required in all construction.

20. *Bricks.*—Bricks used shall be of the best quality of whole new bricks, of uniform size, compact texture, burned hard and entirely through, with true surface, free from injurious cracks and flaws, tough and strong, and having a clear ring when struck together. They must have a crushing strength of not less than 4,500 pounds per square inch, and must not absorb more than 10 per cent of their weight of water, after having been thoroughly dried and then immersed for twenty-four hours in water. Samples will be subject to such tests as may be satisfactory to the engineer.

The truest and smoothest bricks will be used in the face of the masonry. All bricks delivered for use shall be culled by the contractor when required. No bricks rejected in the culling shall be used in any work done under this contract.

21. *Broken stone.*—Broken stone for concrete masonry must be hard and of durable character, the run of the crusher, and it shall not contain more than 1 per cent of materials passing a No. 10 sieve. It shall be thoroughly cleansed from all foreign substances, and, if so ordered by the engineer, it shall be screened and washed. Detritus, or any material other than hard, angular fragments of stone, shall be considered a foreign substance. Every piece of stone for concrete masonry must be small enough in largest dimension to pass through a ring 2 inches in diameter.

22. *Pebbles.*—Pebbles shall be from fine bank or river gravel, thoroughly screened, free from earthy or other foreign matter, and small enough to pass through a ring 1½ inches in diameter, and shall not contain more than 5 per cent of material which shall pass through a No. 10 sieve.

23. *Sand.*—Sand for masonry shall be clean, sharp sand, containing both fine and coarse grains, free from mud, sewage, mica, or other foreign matter, at least equal in desirable qualities to the samples in the property office, District of Columbia, marked "Sample of sand for paving and concrete," and "Sample of sand for brick-work and plastering," respectively.

24. *Water.*—Water used for mortar and concrete shall be fresh and clean, free from earth, dirt, or sewage, and shall be used in such quantity as the engineer may direct.

25. *Platforms.*—Platforms shall be provided upon which all sand and broken stone shall be placed when brought upon the line of the work and there kept until used.

26. *Mortar boxes.*—Tight mortar boxes shall be provided by the contractor, and no mortar shall be made otherwise than in such boxes, except for concrete. No deposits of sand or mixing of mortar will be permitted upon pavements.

27. *Mortar.*—Mortar used in this work shall be composed of Portland cement in perfect condition and loose, dry sand in the proportion of one barrel of cement weighing (net) 380 pounds and 9 cubic feet of sand, thoroughly mixed dry, and a sufficient quantity of water afterwards added to make a rather stiff paste. It shall be used within an hour after the addition of the water, but no mortar shall be used after having become hard or set.

28. *Mixing mortar.*—The thorough mixing and incorporation of all materials will be insisted upon. If done by hand labor the dry cement and sand shall be turned over and mixed with shovels by skilled workmen not less than six times before the water is added.

29. *Concrete masonry.*—Concrete masonry will be classified as follows:

Concrete masonry "A" will be composed of—

1 barrel Portland cement (net weight 380 pounds).

8 cubic feet sand.

8 cubic feet broken stone.

8 cubic feet pebbles.

Water as directed by the engineer.

Concrete masonry "B" will be composed of—

1 barrel Portland cement (net weight 380 pounds).

10 cubic feet sand.

10 cubic feet broken stone.

10 cubic feet pebbles.

Water as directed by the engineer.

Concrete masonry "C" will be composed of—

1 barrel Portland cement (net weight 380 pounds).

12 cubic feet sand.

12 cubic feet broken stone.

12 cubic feet pebbles.

Water as directed by the engineer.

Concrete masonry "D" will be composed of—

1 barrel Portland cement (net weight 380 pounds).

10 cubic feet sand.

20 cubic feet pebbles.

Water as directed by the engineer.

Suitable appliances, satisfactory to the engineer, for measuring the ingredients for each batch of concrete, shall be kept on the line of the work.

30. *Mixing concrete.*—The thorough mixing and incorporation of all materials will be required. If done by hand labor, the dry cement and sand shall be mixed and turned over by skilled workmen with shovels, not less than six times before the water is added; the stone, after being wetted, shall be added to the mixed cement, sand, and water. The whole mass shall then be thoroughly turned over by skilled workmen, with shovels, not less than four times, until every particle of stone is completely enveloped with mortar. The whole operation of mixing and laying each batch shall be performed as expeditiously as possible by the aid of machinery or a sufficient number of skilled men.

31. *Setting.*—Concrete shall not be used after it has begun to show evidences of setting. No concrete which has once set shall be used as metal for mixing a new batch.

32. *Placing.*—The concrete shall not be thrown or dumped from a height, but must be lowered in a vessel and so carefully deposited as to retain the constituents evenly incorporated, as mixed, entirely free from foreign matter of any kind.

33. *Ramming.*—Each batch of concrete shall be spread in place in horizontal layers not exceeding five inches in thickness before ramming and shall be at once thoroughly compacted by ramming.

34. *Water.*—No concrete or other work shall be laid in water, and no water shall be thrown upon or allowed to flow over or rise upon masonry until the mortar has had ample time to become set.

35. *Molds, etc.*—Strong molds, forms, and centers satisfactory to the engineer, made to fit the curves and shapes of all work done under this contract, shall be provided by the contractor for each stage and section of the work, and when they lose their proper dimensions or shape they shall be replaced by others. Planking forming the faces of all exposed walls shall be so matched and placed as to give an even and uniform surface to the concrete. Before being used, the molds shall be scraped clean from cement and dirt. Their setting up, striking, and general management shall conform to directions given by the engineer. For concrete inverts, where brick lining is omitted, sheet steel collapsible forms must be used. All work must be specially smooth and well filled, and no plastering will be allowed.

36. *Invert blocks.*—Invert blocks shall be laid true to line and grade. A concrete bed of the required shape and dimensions shall first be prepared, and a layer of mortar one-half inch thick spread upon this bed. Upon this coat of mortar the blocks shall be laid and each block shall be carefully pressed down and bedded upon the mortar, so as to insure a close contact throughout the bottom and back of surface of the blocks. The joints between consecutive blocks shall be full mortar joints and as close as practicable.

37. *Vitrified bricks.*—Each course of vitrified invert bricks shall be laid in full mortar joints truly on line and the joints upon the face of the work shall not exceed three-sixteenths inch in thickness.

38. *Brickwork.*—Bricks must be thoroughly wet by immersion immediately before laying. Every course shall be laid with a line. Every brick must be thoroughly laid in full mortar joints on bottom, side, and end, which for each brick must be formed by one operation. In no case is the joint to be made by grouting or by working in mortar after laying the brick. No joint shall exceed three-eighths inch in thickness. All joints on faces shall be trowel-struck.

39. *Bonding.*—Brick masonry of sides and arches shall be bonded and keyed at directed, especial care being exercised with each ring against laying too large joints at the back. All joints shall be normal to the section of the sewer and all "lipping" on brick must be carefully avoided.

40. *Bedding.*—Brick masonry below the springing line in brick sewers must be well and firmly bedded upon the foundation prepared for it or upon the wall of the adjacent excavation, as the case may be; and all spaces which would otherwise exist between the outer lines of the sewer and the walls of the foundation or excavation must be filled with hydraulic cement mortar, concrete, or brick masonry, as may be directed.

All unfinished brick masonry must be "racked back" or toothed, as may be directed, and when new work is joined to the unfinished portion, the latter must be thoroughly cleansed.

41. *Arches.*—Concrete arches shall be allowed to set at least twenty-four hours before any back filling or other weight shall be put upon them, and no walking or working thereon shall be allowed during said time.

42. *Plastering.*—As soon as practicable after the "keying up" is completed the back of every arch of brick or concrete shall be thoroughly cleaned of dirt and loose or projecting mortar, and shall then be smoothly plastered, from the springing line to the crown, with a coat of mortar three-eighths inch thick; the work to be done by skilled workmen, using tools satisfactory to the engineer. This coat shall be allowed to become fully set before any back filling is placed or walking allowed upon it.

43. *Piling.*—Piles are to be not less than 8 inches in diameter at the small end, of live timber, sound, straight, and free from rot, large knots, wind shakes, and all other defects. They may be of pine, spruce, white oak, or such other durable timber as the engineer commissioner may approve. They are to be well and carefully driven with small end down, plumb and true to position, by a heavy hammer, delivering blows in rapid succession, to a penetration under the last blow of one-half inch for a hammer weighing 2,000 pounds, falling 12 feet.

Each pile shall be stripped of bark, have all knots pared smooth, and shall have the lower end squared or pointed before the driving, as may be directed.

After driving, the pile shall be cut off so as to form a true and even bearing for the cap timber, which shall be fastened to each pile by a 2-inch treenail of white oak, Georgia or Florida pine, or hickory, or a 1-inch driftbolt driven through the cap and 10 inches into the head of the pile. Any pile split or otherwise injured in driving, or driven out of position will be replaced by a sound one in true position. The top of any pile shall not be drawn over more than 9 inches after driving to allow capping. Any pile which is driven a greater distance from its true position than 9 inches, or whose penetration exceeds one-half inch under the last blow, will be rejected, and must be replaced by a pile driven adjacent thereto as directed by the engineer. While being driven, should a pile head become broomed or otherwise injured so as to prevent effective driving, the top shall be sawed off as directed. When necessary, in the judgment of the engineer, each pile shall be bound, while driving, with a strong iron band, of a proper size to protect pile head. In all cases the pile must refuse for the penetration specified, with the top sufficiently above subgrade to permit cutting off all that portion of the piles split or otherwise injured in any way by the process of driving, when the pile is sawed off at subgrade. In no case will the use of a "follower" be permitted. The piles must be carefully sawed off by a horizontal cut at the required grade line. For piles rejected for any cause whatever no allowance will be made.

44. *Lumber.*—All lumber for use in the completed structure must be sound, straight grained, and free from sap, loose or rotten knots, wind shakes, or any other defect which would tend to impair its strength or durability; must be straight, of the dimensions given, with square edges, and uniform width and thickness throughout each piece. Each floor plank must be secured to each cap timber upon which it rests by two 6-inch spikes. All framing must be done in a thorough, workmanlike manner, and both material and workmanship will be subject to the inspection and approval of the engineer commissioner.

45. *Bracing.*—When, in the opinion of the engineer, it is necessary to protect the masonry from injury, the sewer shall be braced inside, without any additional charge. The bracing shall be done in a manner satisfactory to the engineer and it shall be left in place until he shall direct its removal.

46. *Dirt.*—In lowering material into the trenches care should be taken not to throw dirt upon freshly laid concrete or other masonry in place. At all stages and for all classes of work concrete and mortar must be kept as free as possible from dirt of every kind, and, if unavoidably mixed with dirt, shall be removed and replaced to the satisfaction of the engineer.

47. *Back filling.*—The back filling must be brought up evenly on both sides of the sewer with the best material from the excavation, so that no unbalanced pressure shall be brought upon the masonry. It shall be spread in horizontal layers not exceeding 6 inches in depth before ramming, and thoroughly rammed to the top of the trench. No less than two men shall be employed in ramming for each shoveler engaged in replacing the back filling, which shall be compacted with iron-shod rammers, each weighing not less than 12 pounds. When the back filling is deposited, by means of wheelbarrows, carts or wagons, or by machinery, the ramming shall be done as directed by the engineer.

All slides or caving of sides of the trenches or cuts shall be taken out and back filled by the contractor.

As the trench is refilled, the bracing, etc., shall be removed in such manner as to prevent the caving of the sides of the trench. If sheeting is used, so much of it as extends below the crown of the arch of the basin must be withdrawn, unless otherwise

directed by the engineer, after refilling over the haunches, but before more than 6 inches of earth is placed on the crown of arch, and before the center is struck. As the sheet planks are withdrawn the vacancies left by each shall be carefully refilled by ramming with tools especially adapted for the purpose, by watering or otherwise, as may be directed.

48. *Manholes*.—Brick manholes of the form shown on the drawing shall be constructed in the sewers wherever ordered by the engineer.

49. *Steps*.—Each manhole shall have steps of wrought iron three-fourths inch in diameter, built into brickwork, as shown on the drawings. Similar steps shall be built into the inverts of the sewers at the manholes as the brickwork progresses, as may be directed.

50. *Manhole tops*.—The contractor shall carefully and securely fit each manhole with a cast-iron frame and cover, as shown in the drawings.

In sewers of greater span than 3 feet, the manholes shall spring from one side of the arch; in sewers having a span of 3 feet or less, the axis of the manholes shall be directly over the center of the sewer.

Connections for public and house sewers and catch-basins shall be built into the manholes wherever required.

51. *Sewer pipe*.—Sewer pipe will be of the ring or plain cylindrical pattern.

52. *Laying*.—Laying pipe sewer shall be executed in the following manner: The trench shall first be excavated by the use of the prescribed form to the required depth, shape, and dimensions; concrete shall then be compactly rammed in the bottom to the required depth, and its upper surface brought to a plane lower than the grade of the sewer by the thickness of the wall of the pipe. The pipe must be perfectly supported throughout its entire length upon its concrete bed; bringing the pipe to grade by means of stone, pieces of band, etc., will not be permitted. Concrete shall then be rammed upon the sides and haunches of the pipe to the full specified width and thickness, care being taken that no void spaces exist. The greatest care must be exercised that the alignment and grade of the pipes be not disturbed. The joints between the pipes shall be closed by pointing with stiff mortar, after which a layer of concrete shall be carried over them to a thickness of not less than 4 inches at any point, and having bottom and top widths of not less than 12 inches and 14 inches. During the suspension of the work at night or at other times a suitable stopper shall be placed in the last pipe laid to prevent earth from washing in. No sand, mud, mortar, concrete, or other material shall be allowed on the inside of pipe sewers. Upon completion they must be left straight, clean, smooth, and in every other respect acceptable. Mortar and concrete shall be allowed to set before any back filling is placed or walking is allowed upon the sewer, and the greatest care must be taken not to disturb the pipes, haunching, and banding.

53. *Replacing*.—When necessary to pump sewage in replacing and laying relief sewers, the material pumped shall be carried by means of hose or other water-tight conveyor to the sewer or manhole designated by the engineer, and it shall not be allowed to flow into or over the surface.

54. *Inspection*.—The contractor shall, when requested, provide the engineer with such ladders, lanterns, tools, and labor samples, and other facilities as may be necessary for inspecting materials and work.

Imperfect materials or work which may be discovered shall be replaced or corrected immediately on the requirement of the engineer, notwithstanding that it may have been overlooked by the proper inspector, and included in a partial payment. Materials condemned or rejected by the engineer may be branded or otherwise marked, and shall on his demand be at once removed to a satisfactory distance from the work. Any omission to disapprove the work at the time of inspection, or at the time of any monthly or other estimate, shall not relieve the contractor of any of his obligations, and all work, of whatever kind, which during its progress and before it is finally accepted may become damaged or prove unacceptable for any cause, shall be removed by the contractor and replaced by good and satisfactory work. If not removed within twenty-four hours after written notice from the engineer, it shall be moved by that officer and the cost charged to the contractor and deducted from any amount due or which may become due him.

FORMS ACCOMPANYING ALL SPECIFICATIONS.

INSTRUCTIONS TO BIDDERS.

These instructions will become a part of the contract.

1. *Signature.*—Proposals must be signed by the bidder with the signature in full. When a firm is a bidder, the agent who signs the firm name to the proposal shall state, in addition, the names of the individuals composing the firm. When a corporation is a bidder, the person signing shall state under the laws of what State the corporation was chartered, and the name and title of the officer having authority under the by-laws to sign contracts. The proposal shall also bear the seal of the corporation, attested by its secretary. Anyone signing the proposal as agent must file with it legal evidence of his authority to do so.

2. *Address.*—Post-office address, county and State, must be given after the signature.

3. *Prices.*—All prices must be written in words, as well as expressed in figures. In case of variation the written prices shall govern.

4. *Identification of proposal.*—Proposals will be placed in a sealed envelope, so marked as to indicate its contents without being opened. This envelope will be placed in another addressed to the Commissioners of the District of Columbia, Washington, D. C.; if forwarded otherwise than by mail it must be delivered to the secretary to the Board of Commissioners.

5. *Rejection of bids.*—Reasonable grounds for supposing that any bidder is interested in more than one proposal for the same item will cause the rejection of all proposals in which he is interested. The commissioners reserve the right to waive any informality in the proposals received, to disregard the proposals of any failing bidder or contractor, and to reject any and all proposals, or parts of a proposal, and to make the award in such manner as they consider best for the interests of the District of Columbia.

6. *Experience.*—Bidders must present satisfactory evidence that they have been regularly engaged in the business of constructing such work as they propose to execute; and in case the lowest responsible bidder has never done any work for the District of Columbia, he must, prior to the award of contract, be able to show work done by him within a distance of 1,000 miles from the District of Columbia, and pay the necessary expenses of an inspection of such work by such representatives of the District of Columbia, not exceeding two in number, as may be sent by the engineer to examine it.

7. *Capital and plant.*—Bidders must present satisfactory evidence that they are fully prepared with the necessary capital, materials, and machinery to conduct the work to be contracted for to the satisfaction of the commissioners, and to begin promptly when ordered.

8. Bidders' deposits will be returned on application to the chief clerk, engineer department, to unsuccessful bidders after award of contract is made and to successful bidders after execution of contract.

9. *Laws affecting public work.*—The attention of bidders is invited to the act regulating retent on contracts with the District of Columbia, approved March 31, 1906:

"That on all contracts made by the District of Columbia for construction work there shall be held a retent of ten per centum of the cost of such construction work as a guaranty fund to keep the work done under such contracts in repair, and that the terms of such contracts shall be strictly and faithfully performed. On contracts for the construction of asphalt, tar, brick, cement, or stone pavements the retent shall be held for a term of five years from the date of completion of the contract. On contracts for the construction of bridges and sewers the retent shall be held for a term of one year from date of completion of contract. On contracts for the construction of buildings, and other contracts for construction work, the retent shall be held until the completion of the work. All retents for one year or more shall be deposited with the Treasurer of the United States as now required by law."

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directed by the engineer, after refilling over the haunches, but before more than 6 inches of earth is placed on the crown of arch, and before the center is struck. As the sheet planks are withdrawn the vacancies left by each shall be carefully refilled by ramming with tools especially adapted for the purpose, by watering or otherwise, as may be directed.

48. *Manholes*.—Brick manholes of the form shown on the drawing shall be constructed in the sewers wherever ordered by the engineer.

49. *Steps*.—Each manhole shall have steps of wrought iron three-fourths inch in diameter, built into brickwork, as shown on the drawings. Similar steps shall be built into the inverts of the sewers at the manholes as the brickwork progresses, as may be directed.

50. *Manhole tops*.—The contractor shall carefully and securely fit each manhole with a cast-iron frame and cover, as shown in the drawings.

In sewers of greater span than 3 feet, the manholes shall spring from one side of the arch; in sewers having a span of 3 feet or less, the axis of the manholes shall be directly over the center of the sewer.

Connections for public and house sewers and catch-basins shall be built into the manholes wherever required.

51. *Sewer pipe*.—Sewer pipe will be of the ring or plain cylindrical pattern.

52. *Laying*.—Laying pipe sewer shall be executed in the following manner: The trench shall first be excavated by the use of the prescribed form to the required depth, shape, and dimensions; concrete shall then be compactly rammed in the bottom to the required depth, and its upper surface brought to a plane lower than the grade of the sewer by the thickness of the wall of the pipe. The pipe must be perfectly supported throughout its entire length upon its concrete bed; bringing the pipe to grade by means of stone, pieces of band, etc., will not be permitted. Concrete shall then be rammed upon the sides and haunches of the pipe to the full specified width and thickness, care being taken that no void spaces exist. The greatest care must be exercised that the alignment and grade of the pipes be not disturbed. The joints between the pipes shall be closed by pointing with stiff mortar, after which a layer of concrete shall be carried over them to a thickness of not less than 4 inches at any point, and having bottom and top widths of not less than 12 inches and 14 inches. During the suspension of the work at night or at other times a suitable stopper shall be placed in the last pipe laid to prevent earth from washing in. No sand, mud, mortar, concrete, or other material shall be allowed on the inside of pipe sewers. Upon completion they must be left straight, clean, smooth, and in every other respect acceptable. Mortar and concrete shall be allowed to set before any back filling is placed or walking is allowed upon the sewer, and the greatest care must be taken not to disturb the pipes, haunching, and banding.

53. *Replacing*.—When necessary to pump sewage in replacing and laying relief sewers, the material pumped shall be carried by means of hose or other water-tight conveyor to the sewer or manhole designated by the engineer, and it shall not be allowed to flow into or over the surface.

54. *Inspection*.—The contractor shall, when requested, provide the engineer with such ladders, lanterns, tools, and labor samples, and other facilities as may be necessary for inspecting materials and work.

Imperfect materials or work which may be discovered shall be replaced or corrected immediately on the requirement of the engineer, notwithstanding that it may have been overlooked by the proper inspector, and included in a partial payment. Materials condemned or rejected by the engineer may be branded or otherwise marked, and shall on his demand be at once removed to a satisfactory distance from the work. Any omission to disapprove the work at the time of inspection, or at the time of any monthly or other estimate, shall not relieve the contractor of any of his obligations, and all work, of whatever kind, which during its progress and before it is finally accepted may become damaged or prove unacceptable for any cause, shall be removed by the contractor and replaced by good and satisfactory work. If not removed within twenty-four hours after written notice from the engineer, it shall be moved by that officer and the cost charged to the contractor and deducted from any amount due or which may become due him.

FORMS ACCOMPANYING ALL SPECIFICATIONS.

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Also to public act No. 82, approved February 28, 1899, relative to payment of claims for material and labor furnished for District of Columbia buildings, and to the public act relating to the limitation of the hours of daily service of laborers and mechanics upon the public works of the United States and the District of Columbia.

All laws and regulations of the United States and of the District of Columbia, especially in so far as they relate to the protection of life and property, are to be strictly observed.

10. No waiver of any breach of the contract shall constitute a waiver of any subsequent breach of any part thereof, nor of the contract.

11. *Return of deposits.*—Bidders' deposits will be returned on application to the chief clerk, engineer department, to unsuccessful bidders after award of contract is made and to successful bidders after execution of contract.

12. *Sundays or legal national holidays.*—No work shall be done on Sundays or legal national holidays except in cases of emergency, and then only with the consent of the engineer, nor shall any work be done at night unless authorized in writing by the engineer.

13. Changes, alterations, or interlineations must be explained by footnote in proposal.

14. If a bidder wishes to withdraw his proposal, he may do so before the time fixed for the opening, without prejudice to himself, by communicating his purpose in writing to the secretary to the Board of Commissioners, and when reached it shall be handed to him or his authorized agent unread.

GENERAL STIPULATIONS.

1. These stipulations are part of the specifications.

2. *Transfers.*—No contract or any interest therein shall be transferred by the parties to whom the award is made; such transfers will be null and void, and will cause the contract to be annulled and the work to be given to other parties under the condition mentioned herein.

3. *Patents.*—The contractor will be required to hold the District of Columbia harmless against all claims for the use of any patented article, process, or appliance in connection with the contract herein contemplated.

4. *Contractor's risk.*—All loss or damage due to negligence, or arising out of the nature of the work to be done, or from any unforeseen or unusual obstructions or difficulties which may be encountered in the prosecution of the same, or from the action of the elements, will be sustained by the contractor.

5. *Employees.*—The contractor shall employ capable superintendents or foremen to represent him on the work, and they shall receive and obey orders from the engineer. He shall so conduct his operations as to interfere with the work of other District contractors as little as possible. Skilled laborers and mechanics only shall be employed.

An employee or agent of the contractor who shall use profane or abusive language to the superintendent or inspector, or otherwise impede or embarrass him in the performance of his duty, or who, in the opinion of the engineer, is careless or incompetent or obstructs the progress of the work, or disobeys or evades the instructions given by the engineer, shall be immediately discharged and not again employed without the consent of the engineer.

6. *Weather.*—The contractor shall suspend all work under the contract when notified by the engineer that the weather is unsuitable for carrying it on.

If work is allowed during cold or freezing weather, the contractor shall take such additional precautions as the engineer shall require, without additional expense, and under no circumstances shall materials be used which have been injured by the weather.

7. *Inspection.*—Inspectors may be appointed who shall have access to all parts of the work at all times and whose duty it shall be to point out to the contractors any neglect or disregard of the specifications of contract; but the right of final rejection of the work will not be waived at any time. Upon all technical questions concerning the execution of the work, in accordance with the specifications and measurements thereof, the decision of the engineer shall be final. Ordinarily one inspector will be employed by the District of Columbia for each section of the work under contract; but if on account of any apparent disregard of the specifications additional inspectors shall be required they will be employed by the District of Columbia, at the rate not to exceed \$4.50 per diem each, and the cost of the same will be charged to the contractor.

8. *Condemned work.*—All materials furnished and work done not in accordance with these specifications shall be removed within twenty-four hours after written notice from the engineer by and at the expense of the contractor, or in case of failure to do so it shall be removed by the District of Columbia and the cost thereof charged to the contractor and deducted from the amount due or which may become due him. None but the best material of the several descriptions shall be used.

9. *District material.*—No materials furnished by the District shall be applied to any other use, public or private, than that for which they are issued to the contractor. The contractor will be held responsible for all materials delivered to him upon requisition, and shall be charged for all materials delivered upon said requisition. Should the amount of materials delivered to the contractor exceed the amount used upon the

work or otherwise properly accounted for, the cost to the District of the difference must be made good by the contractor and will be deducted from any moneys which may be due him.

Any material that is the property of the District that is not accounted for by the contractor will be charged against him at the contract price for similar material.

10. *Delay.*—Delay on the part of the District to furnish materials is not to give cause for claims for damages, but the time for completing the work may be extended on this account, as the engineer shall judge equitable, or if, owing to excessive wet weather, severe cold, or other cause beyond the control of the contractor, he is prevented from finishing his work in time, his contract may be extended by the commissioners without penalty or cost of inspection.

11. *Failure.*—Except as covered by paragraph 10, failure of the contractor to commence the work at the time specified or to prosecute it thereafter in a satisfactory manner and at a proper rate of progress, in the opinion of the commissioners, to insure its completion in the time specified, or any other breach of any agreement or covenant in this contract made by the contractor will be authority for the commissioners to suspend the contractor from the work and employ other parties to complete it, or to employ additional parties to assist in its completion, or to annul the contract. Upon the death of the contractor during the life of a contract his executors, administrators, or other personal representatives will be expected, without further notice, to prosecute the work to completion, and upon failure or neglect to do so within a reasonable period, in the opinion of the commissioners, to insure its completion within the stipulated time, the said commissioners shall proceed as specified above in the case of a failure of the contractor.

All moneys due the contractor or his estate at the date of failure will be applied to the conduct and maintenance of the work, and any excess of cost over and above the contract price will be charged against the contractor and sureties, who will each and severally be held liable therefor.

The commissioners may, if it is their opinion that such action will be to the advantage of the District, grant the contractor an extension of time, charging him with the cost of inspection at a rate not to exceed \$4.50 per day for each inspector engaged upon the work, and deducting from him \$10 for each day of such extension, either or both, the latter as liquidated and fixed damages to the District arising from the failure to complete the work in the time specified; or they may waive all charges for such extension.

12. *Extra work.*—The contractor must be prepared to do any extra work that may be ordered in writing by the engineer arising out of any modification of these specifications that may appear necessary, and for this he will be paid at current contract rates for work of similar character; or, if the extra work should be of a class for which no rate is fixed by current contracts, the actual reasonable cost to the contractor as determined by the engineer, plus 15 per cent. The contractor shall have no claim for compensation for extra work unless the same is ordered in writing by the engineer. All additional and extra work shall conform to current District of Columbia specifications therefor.

13. *Payments.*—Payments will be made monthly, provided the progress of the work is satisfactory, less 10 per cent of each estimate, to be withheld until final payment; but 10 per cent of the cost of the work will be retained and invested as hereinbefore provided.

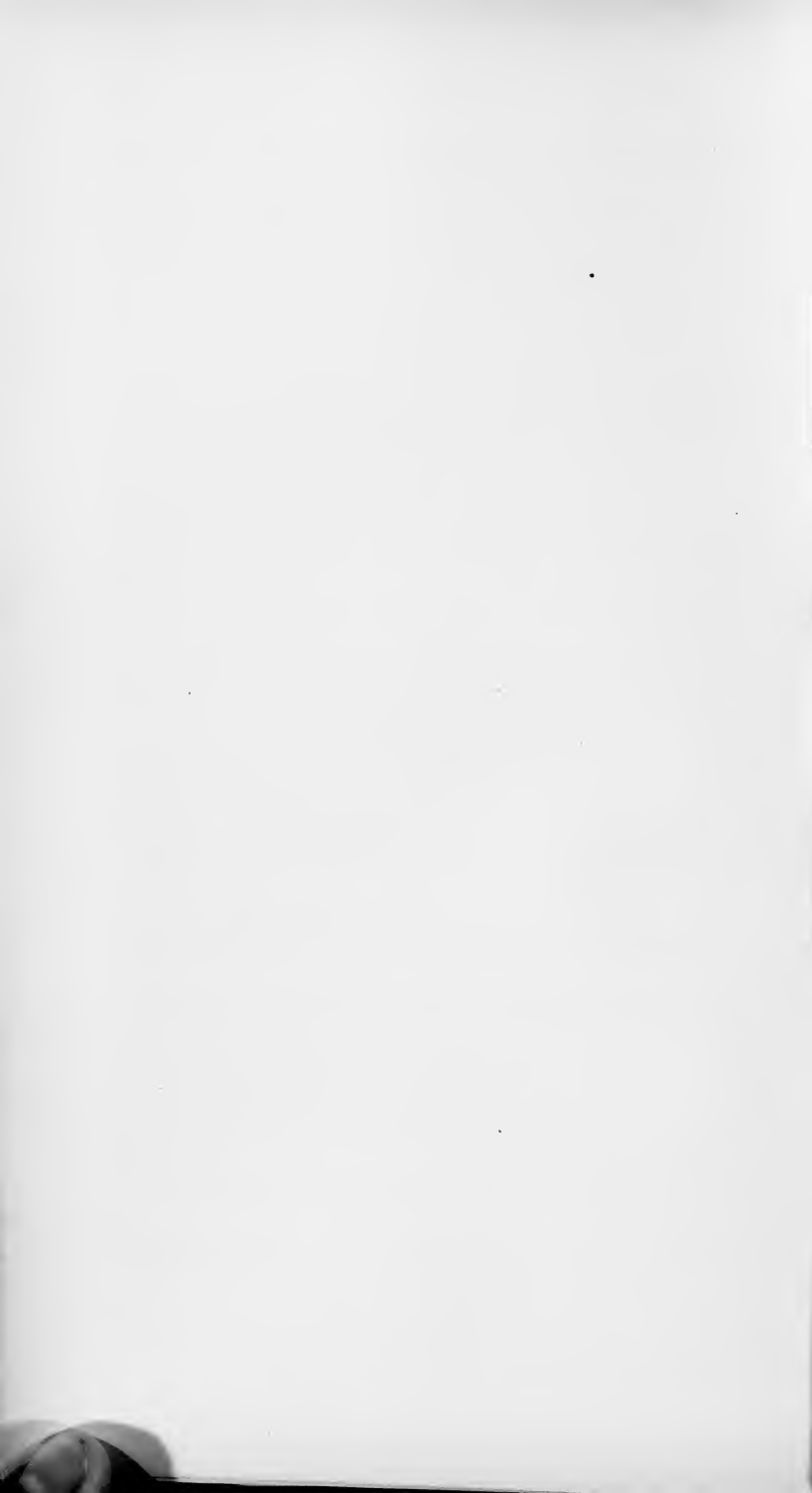
14. *Conveniences.*—Necessary conveniences, properly secluded from public observation, shall be constructed whenever needed for the use of the laborers on the work.

15. *Cleaning up.*—On the completion of work it shall be thoroughly cleaned before it will be accepted.

16. *Lines.*—All necessary lines and levels will be given by the engineer by means of suitable marks, and in establishing them the contractor shall provide such materials and assistance as may be required by the engineer. All marks given are to be carefully preserved, and if destroyed through carelessness the cost of replacing them shall be charged against the contractor at a fixed price of \$2 for each point, to be deducted from any money found due at final settlement.

17. All loss or damage due to negligence or arising out of the nature of the work to be done, or from any unforeseen or unusual obstructions or difficulties which may be encountered in the prosecution of the same, or from the action of the elements, will be sustained by the contractors.

18. *Interpretation.*—Any doubt as to the meaning of these specifications will be explained by the engineer, who shall have the right to correct any errors or omissions in them when such correction is necessary for the proper fulfillment of their intention. Wherever the word "Commissioners" is used in these specifications, it is understood to designate the Commissioners of the District of Columbia. Wherever the word "Engineer" is used, it is understood to designate the Engineer Commissioner of the District of Columbia, or in his absence his duly authorized assistants, assistant engineers, and inspectors representing him, limited by the special duties intrusted to them.



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